

September 2016

Applegate Valley Rural Fire Protection District #9/2664
Oregon Public Employees Retirement System

Dear Sir or Madam:

As part of our engagement with the Oregon Public Employees Retirement Board, we performed a system-wide actuarial valuation of the Oregon Public Employees Retirement System (“PERS” or “the System”) as of December 31, 2015. The attached report, which is an informational supplement to the system-wide report, provides you with employer-specific contribution rates that will become effective July 1, 2017. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information will be provided separately by PERS and is not included in this report.

This report reflects the System's benefit provisions in effect as of December 31, 2015. The full development of the valuation results for the OPSRP and Retiree Health Insurance Account (RHIA) programs can be found in the separate system-wide actuarial valuation report. Costs of the IAP (Individual Account Program) are not included in this or the system-wide actuarial valuation report. Further, costs of pension obligation bond payments are not included in this or the system-wide actuarial valuation report.

If you have any questions about this report, please contact Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, OPSRP general service, and OPSRP police and fire payroll,
- Information to assist you in completing GASB 45 financial reporting requirements, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- Detailed development of Tier 1/Tier 2 valuation results,
- A brief summary of methods and assumptions, and
- A brief summary of any changes in System benefit provisions.

Additional information is provided in the system-wide actuarial valuation report, which is available at www.oregon.gov/PERS/Pages/section/financial_reports/financials.aspx.



September 2016
Applegate Valley Rural Fire Protection District #9/2664

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the System's staff. This information includes, but is not limited to, System benefit provisions as defined by statute, member census data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for the System have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer a reasonable estimate of anticipated experience affecting the System.

A valuation report is only an estimate of the System's financial condition as of a single date. It can neither predict the System's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of System benefits, only the timing of System contributions. While a valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: System experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the System's funded status); and changes in System benefit provisions or applicable law. Due to the limited scope of this assignment, we did not perform an analysis of the potential range of future measurements. The Board has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in September 2015.

Some of the actuarial computations presented in this report are for purposes of determining the contribution rates effective from July 2017 to June 2019 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.



September 2016
Applegate Valley Rural Fire Protection District #9/2664

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the System. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

Additional information is provided in the system-wide actuarial valuation report.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Larrabee".

Matt Larrabee, FSA, EA, MAAA
Principal and Consulting Actuary

A handwritten signature in black ink, appearing to read "Scott Preppernau".

Scott Preppernau, FSA, EA, MAAA
Principal and Consulting Actuary



ACTUARIAL VALUATION REPORT DECEMBER 31, 2015

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

INDEPENDENT EMPLOYERS

Applegate Valley Rural Fire Protection District #9 -- #2664

September 2016

CONTENTS

Executive Summary **1**

Employer Contribution Rates 1

Accounting Information 3

Principal Valuation Results 5

 ▪ Employer 5

 ▪ Tier 1/Tier 2 6

 ▪ OPSRP 7

 ▪ Retiree Healthcare 7

Side Account Information **8**

Tier 1/Tier 2 Valuation Results **10**

Assets 10

Liabilities 11

Unfunded Accrued Liability (UAL) 13

Contribution Rate Development 15

Data **20**

Brief Summary of Actuarial Methods and Assumptions **22**

Brief Summary of Changes in Plan Provisions **24**

Glossary **25**

Executive Summary

Milliman has prepared this report for Applegate Valley Rural Fire Protection District #9 to:

- Provide summary December 31, 2015 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2017 through June 30, 2019,
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2015, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45. GASB 68 information will be provided separately by PERS and is not included in this report.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2015 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Applegate Valley Rural Fire Protection District #9.

Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2017 through June 30, 2019 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

Employer Rates Effective July 1, 2017 for Applegate Valley Rural Fire Protection District #9

	Payroll		
	Tier 1/Tier 2	OPSRP	
		General Service	Police & Fire
Pension			
Normal cost rate	17.70%	8.02%	12.79%
Tier 1/Tier 2 UAL rate ¹	(1.71%)	(1.71%)	(1.71%)
OPSRP UAL rate	1.27%	1.27%	1.27%
Side account rate relief	0.00%	0.00%	0.00%
Net pension contribution rate	17.26%	7.58%	12.35%
Retiree Healthcare			
Normal cost rate	0.07%	0.00%	0.00%
UAL rate	0.43%	0.43%	0.43%
Net retiree healthcare rate	0.50%	0.43%	0.43%
Total net employer contribution rate	17.76%	8.01%	12.78%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate.

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 Biennium

The rate collar limits changes in contribution rates, but does not limit changes in rates for individual employers related to side accounts. The table below shows the possible minimum and maximum rates first effective as of July 1, 2019, which will depend on the funded status as of December 31, 2017. If the employer's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2015 is 84%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	15.99%	15.99%
Minimum 2019-2021 Rate	12.79%	9.59%
Maximum 2019-2021 Rate	19.19%	22.39%

Executive Summary

Accounting Information

Milliman is not an accounting or audit firm and cannot provide accounting advice. Milliman is not responsible for the interpretation of, or compliance with, accounting standards; citations to, and descriptions of accounting standards provided in this report are for reference purposes only. The information provided in this section is intended to assist the employer in completing its financial statements, but any accounting determination should be reviewed by your auditor.

Pension

In June 2012 the GASB issued Statement No. 68, which replaced GASB 27 and governs employer financial reporting for fiscal years beginning after June 15, 2014. The new standard replaced many of the key elements of the prior reporting requirements. Under the new rules, employers are required to record a balance sheet liability for their unfunded pension obligations. In addition, the timing and coordination of plan and employer reporting has changed under the new requirements. GASB 68 information for employers will be provided separately by PERS and is not included in this report.

Schedule of Funding Progress

Under GASB 27, the Schedule of Funding Progress for Tier 1/Tier 2 pension liabilities was reported in the Required Supplementary Information. This schedule is no longer required now that GASB 68 has replaced GASB 27. However, for additional information and the sake of historical comparison, the updated schedule is shown below for the last several valuations. For employers with side accounts, the actuarial value of assets in this Schedule includes the value of the employer's side accounts.

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (b - a)	Funded Ratio (a ÷ b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a) ÷ c)
12/31/2010	\$1,418,875	\$1,380,228	(\$38,647)	103%	\$468,252	(8%)
12/31/2011	1,483,793	1,483,736	(57)	100%	461,525	0%
12/31/2012	1,735,182	1,708,530	(26,652)	102%	486,254	(5%)
12/31/2013	2,030,453	1,929,051	(101,402)	105%	528,604	(19%)
12/31/2014	2,207,562	2,393,369	185,807	92%	533,698	35%
12/31/2015	2,240,228	2,653,532	413,304	84%	626,420	66%

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) is a cost-sharing pool under Statement No. 45 of the Governmental Accounting Standards Board (GASB 45). Consequently, each employer reports the contractually required contribution. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 was calculated as a part of this valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
	Tier 1 / Tier 2	OPSRP	
		General Service	Police & Fire
July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern employer financial reporting for retiree healthcare obligations for fiscal years beginning after June 15, 2017. In general, the changes required by GASB 75 parallel those that occurred for pension reporting when GASB 68 replaced GASB 27. Accounting information for reporting under GASB 75 will be provided separately and is not included in this report.

Executive Summary

Principal Valuation Results

A summary of principal valuation results from the current valuation and the prior valuation follows. Any changes in actuarial assumptions, methods or plan provisions between the two valuations are described later in this report. More detailed information can be found in the system-wide actuarial valuation report.

Applegate Valley Rural Fire Protection District #9

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
T1/T2 UAL	\$413,304	\$185,807
Allocated pooled OPSRP UAL	89,054	61,013
Side account	0	0
Net unfunded pension actuarial accrued liability	502,358	246,820
Combined valuation payroll	626,420	533,698
Net pension UAL as a percentage of payroll	80%	46%
Calculated side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	\$3,042	\$4,242

In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer’s combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.

Executive Summary

Principal Valuation Results (continued)

Tier 1/Tier 2

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
Normal cost	\$77,235	\$80,903
Tier 1/Tier 2 valuation payroll	436,423	467,416
Tier 1/Tier 2 pension normal cost rate	17.70%	17.31%
Tier 1/ Tier 2 Actuarial accrued liability	\$2,653,532	\$2,393,369
Actuarial asset value	2,240,228	2,207,562
Tier 1/Tier 2 Unfunded actuarial accrued liability	413,304	185,807
Tier 1/ Tier 2 Funded status	84%	92%
Combined valuation payroll	\$626,420	\$533,698
Tier 1/Tier 2 UAL as a percentage of payroll	66%	35%
Tier 1/Tier 2 UAL rate (includes Multnomah Fire District #10)	(1.71%)	(1.32%)
Tier 1/Tier 2 active members ¹	5	6
Tier 1/Tier 2 dormant members	2	2
Tier 1/Tier 2 retirees and beneficiaries	2	2

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
General service normal cost	\$342.2	\$301.3
OPSRP general service valuation payroll	4,266.9	3,720.4
General service normal cost rate	8.02%	8.10%
Police and fire normal cost	\$69.9	\$59.6
OPSRP police and fire valuation payroll	546.4	462.3
Police and fire normal cost rate	12.79%	12.90%
Actuarial accrued liability	\$3,742.5	\$3,064.1
Actuarial asset value	2,389.1	2,024.6
Unfunded actuarial accrued liability	1,353.5	1,039.5
Funded status	64%	66%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	14%	11%
UAL rate	1.27%	1.01%

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
RHIA		
Normal cost	\$3.3	\$3.5
Tier 1 / Tier 2 valuation payroll	4,730.8	4,933.1
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	\$465.6	\$468.4
Actuarial asset value	419.3	395.9
Unfunded actuarial accrued liability	46.3	72.5
Funded status	90%	85%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	0%	1%
UAL rate	0.43%	0.43%

Side Account Information

Reconciliation of Side Accounts

The following table reconciles the total side account from the beginning of the year to the end of the year. Side account transfers were calculated by PERS and made on a monthly basis. The amount of these transfers is shown in the table below.

All information in this table has been provided by PERS.

	New	Continuing	Total
1. Side account as of December 31, 2014	N/A		
2. Deposits made during 2015		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2015			
5. Side account earnings during 2015			
6. Side account as of December 31, 2015 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2015	December 31, 2014
Side account 1	\$0	\$0
Side account 2	0	0
Side account 3	0	0
Total	\$0	\$0

Development of Side Account Rate

The rate relief attributable to an employer's side account is determined by amortizing the side account balance on the valuation date over a fixed period, and expressing the result as a percentage of combined valuation payroll. For side accounts established prior to December 31, 2009, the fixed period ends December 31, 2027. For side accounts established at a later date, the fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2015	December 31, 2014
1. Total side account	\$0	\$0
2. Combined valuation payroll	626,420	533,698
3. Average Amortization factor	9.504	10.118
4. Total side account rate (-1. ÷ 2. ÷ 3.)¹	0.00%	0.00%

¹ For employers with more than one side account, the Total Side Account Rate is determined by calculating the rate on each side account separately and adding the rates together.

Tier 1/Tier 2 Valuation Results

Assets

A summary of the market value of pension assets, and reconciliation from the prior year are shown below.

Summary of Market Value of Tier 1/Tier 2 Pension Assets

	December 31, 2015	December 31, 2014
1. Member reserves	\$342,767	\$320,161
2. Employer reserves	1,710,413	1,680,213
3. Benefits in force reserve	187,048	207,188
4. Total market value of assets (1. + 2. + 3.)	\$2,240,228	\$2,207,562

The market value of member and employer reserves is provided by PERS. The benefits in force reserve provided by PERS is allocated each year among employers in proportion to their liabilities for retired members and beneficiaries.

Reconciliation of Tier 1/Tier 2 Pension Assets

	December 31, 2014 to December 31, 2015
1. Market value of assets at beginning of year	\$2,207,562
2. Regular employer contributions	5,443
3. Benefit payments and expense	(34,015)
4. Adjustments ¹	7,623
5. Interest credited	53,615
6. Total transferred from side accounts	0
7. Market value of assets at end of year (1. + 2. + 3. + 4. + 5. + 6.)	\$2,240,228

¹ Note the adjustment item above includes a reallocation of the benefits in force reserve, transfers to Multnomah Fire District #10, and other adjustments made by PERS.

Tier 1/Tier 2 Valuation Results

Liabilities

Normal Cost

The normal cost represents the value of benefits assigned to the next year of service by the actuarial cost method. If all actuarial assumptions are met, the normal cost represents the amount that would need to be contributed each year to fund plan benefits. Amounts shown below include assumed administrative expenses, which are allocated pro-rata based on normal cost.

Summary of Normal Cost by Tier/Member Classification

	December 31, 2015	December 31, 2014
Tier 1 Police & Fire	\$26,641	\$22,807
Tier 1 General Service	0	0
Tier 2 Police & Fire	43,370	51,312
Tier 2 General Service	7,224	6,784
Total	\$77,235	\$80,903

Change in Tier 1/Tier 2 Normal Cost

The following table shows the impact of the assumption, method, and plan changes on normal cost as of December 31, 2015.

	Before Changes	After Changes	Net Change
Normal Cost	\$77,235	\$77,235	\$0

Tier 1/Tier 2 Valuation Results

Liabilities

Actuarial Accrued Liability

The actuarial accrued liability represents the value of benefits allocated to service performed before the valuation date by the actuarial cost method. If all actuarial assumptions are met, the actuarial accrued liability represents the amount of assets that would need to be accumulated as of the valuation date to provide for the portion of benefits allocated to service already performed.

Summary of Actuarial Accrued Liability by Tier/Member Classification

	December 31, 2015	December 31, 2014
Active Members		
▪ Tier 1 Police & Fire	\$926,164	\$731,385
▪ Tier 1 General Service	0	0
▪ Tier 2 Police & Fire	935,543	896,683
▪ Tier 2 General Service	130,005	111,991
▪ Total Active Members	\$1,991,712	\$1,740,059
Dormant Members	257,947	251,371
Retired Members and Beneficiaries	403,873	401,939
Total Actuarial Accrued Liability	\$2,653,532	\$2,393,369

Change in Tier 1/Tier 2 Actuarial Accrued Liability

The following table shows the impact of the assumption, method, and plan changes on the actuarial accrued liability as of December 31, 2015.

	Before Changes	After Changes	Net Change
Actuarial Accrued Liability	\$2,653,532	\$2,653,532	\$0

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Summary of UAL

The UAL represents the difference between the assets accumulated and the liability attributed to prior years of service by the cost method.

	December 31, 2015	December 31, 2014
1. Actuarial accrued liability	\$2,653,532	\$2,393,369
2. Actuarial value of assets	2,240,228	2,207,562
3. Unfunded accrued liability (1. – 2.)	413,304	185,807
4. Funded percentage (2. ÷ 1.)	84%	92%
5. Combined valuation payroll	\$626,420	\$533,698
6. Unfunded accrued liability as % of combined valuation payroll (3. ÷ 5.)	66%	35%

Reconciliation of UAL Bases

Beginning with the December 31, 2013 actuarial valuation, each odd-year valuation establishes a 20-year closed-period amortization schedule for outstanding Tier 1/Tier 2 UAL amounts. Amortization schedules are calculated based on the total Tier 1/Tier 2 UAL as of that valuation date less the remaining unamortized balance of previously established Tier 1/Tier 2 UAL bases.

Amortization Base	UAL December 31, 2014	Payment	Interest	UAL December 31, 2015	Next Year's Payment
December 31, 2013	(\$101,619)	(\$7,612)	(\$7,317)	(\$101,324)	(\$7,878)
December 31, 2015	N/A	N/A	N/A	\$514,628	\$37,238
Total				\$413,304	\$29,360

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Actuarial Gain or Loss since Prior Valuation

The system-wide actuarial valuation report contains a detailed analysis of gains and losses since the last valuation. The table below shows the gain or loss for the individual employer.

1. Expected actuarial accrued liability	
a. Actuarial accrued liability at December 31, 2014	\$2,393,369
b. Normal cost at December 31, 2014 (excluding assumed expenses)	77,420
c. Benefit payments during 2015	(33,752)
d. Interest at 7.50% to December 31, 2015	181,140
e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)	2,618,177
f. Change in actuarial accrued liability due to assumption, method, and plan changes	0
g. Expected actuarial accrued liability at December 31, 2015 (e. + f.)	2,618,177
2. Actuarial accrued liability at December 31, 2015	2,653,532
3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)	(35,355)
4. Expected actuarial value of assets	
a. Actuarial value of assets at December 31, 2014	2,207,562
b. Contributions for 2015 ¹	5,443
c. Benefit payments and expenses during 2015	(34,015)
d. Interest at 7.50% to December 31, 2015	164,496
e. Expected actuarial value of assets at December 31, 2015 (a. + b. + c. + d.)	2,343,486
5. Actuarial value of assets at December 31, 2015	2,240,228
6. Gain/(loss) on actuarial value of assets (5. - 4.e.)	(103,258)
7. Total actuarial gain/(loss) (3. + 6.)	(\$138,613)

Unfunded Accrued Liability Reconciliation

A reconciliation of the Tier 1/Tier 2 UAL from December 31, 2014 is provided below.

1. UAL at December 31, 2014	\$185,807
2. Expected increase	88,884
3. Liability (gain)/loss	35,355
4. Asset (gain)/loss	103,258
5. Change due to changes in assumptions, methods, and plan provisions	0
6. UAL at December 31, 2015 (1. + 2. + 3. + 4. + 5.)	\$413,304

¹ Includes rate relief from side accounts.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Normal Cost Rate

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

Development of Tier 1/Tier 2 Normal Cost Rate

	December 31, 2015			December 31, 2014		
	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate
Tier 1 Police & Fire	\$26,641	\$145,663	18.29%	\$22,807	\$124,552	18.31%
Tier 1 General Service	0	0	0.00%	0	0	0.00%
Tier 2 Police & Fire	43,370	237,720	18.24%	51,312	293,273	17.50%
Tier 2 General Service	7,224	53,040	13.62%	6,784	49,591	13.68%
Total	\$77,235	\$436,423	17.70%	\$80,903	\$467,416	17.31%

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Development of Tier 1/Tier 2 UAL Rates

The UAL rate is determined by calculating the next year's scheduled payment to the UAL as a percentage of combined valuation payroll.

	December 31, 2015	December 31, 2014
1. Total Tier 1/Tier 2 UAL	\$413,304	\$185,807
2. Next year's Tier 1/Tier 2 UAL payment	29,360	13,186
3. Combined valuation payroll	626,420	533,698
4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)	4.69%	2.47%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	17.70%	17.31%
b. Tier 1/Tier 2 UAL rate	4.69%	2.47%
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate (a. + b. + c.)	22.54%	19.93%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Adjustments Due to Rate Collar and Minimum Rate Requirements

Employer contribution rates are generally limited to change by no more than the greater of 3 percent of payroll or 20 percent from the current contribution rate. However, if the funded percentage excluding side accounts is below 60 percent or above 140 percent the rate collar doubles in size. If the funded percentage excluding side accounts is between 60 and 70 percent or 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

The table below shows the current contribution rate for the period from July 1, 2015 through June 30, 2017, develops the maximum and minimum contribution rates effective July 1, 2017 based on the collar, and calculates the net adjustment due to the collar and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

1. Current net Tier 1/Tier 2 pension contribution rate		12.99%
2. Employer contribution rate attributable to side accounts		0.00%
3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)		12.99%
4. Size of rate collar		
a. 20% of current employer contribution rate (20% x 3.)		2.60%
b. Preliminary size of rate collar (maximum of 3% or a.)		3.00%
c. Funded percentage		84%
d. Size of rate collar (If c. < 60% or c. > 140%, 2 x b. If c. is 70%-130%, b. Otherwise, a graded rate between b. and 2 x b.)		3.00%
5. July 1, 2017 minimum employer contribution rate	(3. – 4.d. but not < 0%)	9.99%
6. July 1, 2017 maximum employer contribution rate	(3. + 4.d.)	15.99%
7. July 1, 2017 total pension rate, before adjustment		22.54%
8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)		(6.55%)
9. July 1, 2017 Tier 1/Tier 2 UAL rate, before collar		4.69%
10. July 1, 2017 Tier 1/Tier 2 UAL rate, after collar	(8. + 9.)	(1.86%)
11. July 1, 2017 Tier 1/Tier 2 pension rate, after collar		15.99%
12. Tier 1/Tier 2 retiree healthcare rate		0.50%
13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)		0.00%
14. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment		17.70%
15. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)		17.70%
16. July 1, 2017 Tier 1/Tier 2 pension rate, after minimum adjustment	(11. + 13.)	15.99%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Post-Rate Collar)

The table below summarizes the employer's pension contribution rate for Tier 1 /Tier 2 after adjustments for the rate collar and the 6 percent of payroll minimum employer contribution rate.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	17.70%	17.31%
b. Tier 1/Tier 2 UAL rate	(1.86%)	(1.47%)
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate <i>(a. + b. + c., minimum of 5.50%)</i>	15.99%	15.99%

Data

Demographic Information

Employer Valuation Payroll

	General Service	Police & Fire	Total
Tier 1	\$0	\$145,663	\$145,663
Tier 2	53,040	237,720	290,760
Tier 1/Tier 2 valuation payroll	53,040	383,383	436,423
OPSRP valuation payroll	0	189,997	189,997
Combined valuation payroll	\$53,040	\$573,380	\$626,420

Employer Member Census

	December 31							
	2015				2014			
	Tier 1	Tier 2	OPSRP	Total	Tier 1	Tier 2	OPSRP	Total
Active Members ¹								
General Service	0	1	0	1	0	1	0	1
Police & Fire	1	3	3	7	1	4	1	6
Total	1	4	3	8	1	5	1	7
Active Members with previous service segments with the employer								
General Service	0	0	N/A	0	0	0	N/A	0
Police & Fire	1	4	N/A	5	1	4	N/A	5
Total	1	4	N/A	5	1	4	N/A	5
Dormant Members								
General Service	0	0	0	0	0	0	0	0
Police & Fire	1	1	0	2	1	1	0	2
Total	1	1	0	2	1	1	0	2
Retired Members and Beneficiaries								
General Service	0	0	0	0	0	0	0	0
Police & Fire	2	0	0	2	2	0	0	2
Total	2	0	0	2	2	0	0	2
Grand Total Number of Members	5	9	3	17	5	10	1	16

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Data

Demographic Information (continued)

Employer Tier 1/Tier 2 Active Members as of December 31, 2015

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
<20										
20-24										
25-29										
30-34										
35-39										
40-44				1						1
45-49			1							1
50-54										
55-59					1					1
60-64			1	1						2
65-69										
70-74										
75+										
Total	0	0	2	2	1	0	0	0	0	5

Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2015

Dormant Members			Retired Members and Beneficiaries		
Age	Count	Average Deferred Monthly Benefit	Age	Count	Average Monthly Benefit
<20			<45		
20-24			45-49		
25-29			50-54		
30-34			55-59		
35-39			60-64	1	166
40-44			65-69	1	2,198
45-49			70-74		
50-54	1	368	75-79		
55-59			80-84		
60-64			85-89		
65-69	1	1,524	90-94		
70-74			95-99		
75+			100+		
Total	2	946	Total	2	1,182

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2015 valuation can be found in the system-wide actuarial valuation report.

Actuarial Methods and Valuation Procedures

A brief summary of the methods used in this valuation is shown below:

<i>Actuarial cost method</i>	Entry Age Normal.
<i>Amortization Method</i>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. Gains and losses between subsequent odd-year valuations will be amortized as a level percentage of projected combined valuation payroll over a closed 20 year period.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.</p>

Economic Assumptions

A brief summary of the key economic assumptions used in this valuation is shown below:

<i>Net investment return</i>	7.50% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.50% compounded annually on members' regular account balances.</p> <p>7.50% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 6.3% in 2016 to 4.4% in 2094.
<i>Administrative Expenses</i>	<p>\$5.5 million added to OPSRP normal cost.</p> <p>\$33.0 million added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2014 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

There were no changes in actuarial methods and allocation procedures since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA actuarial methods and allocation procedures is provided as part of the system-wide valuation report.

Changes in Assumptions

There were no changes in assumptions since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA assumptions is provided as part of the system-wide valuation report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Glossary

Actuarial Accrued Liability

The portion of the present value of prospective benefits allocated to service and compensation before the valuation date in accordance with the actuarial cost method.

Actuarial Asset Value

The value of assets used in calculating the required contributions. The actuarial asset value may be equal to the fair market value of assets, or it may spread the recognition of certain investment gains or losses over a period of years in accordance with an asset valuation method.

Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disablement and retirement; rates of investment earnings and other relevant items.

Actuarial Cost Method

Sometimes called “funding method,” a particular technique used by actuaries to establish the amount and incidence of the annual actuarial cost of pension plan benefits, or normal cost, and the related unfunded actuarial accrued liability. Ordinarily, the annual contribution to the plan comprises the normal cost and an amount for amortization of the unfunded actuarial accrued liability.

Actuarial Gain or (Loss)

A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions, during the period between two actuarial valuation dates, as determined in accordance with a particular actuarial cost method.

Combined Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for both Tier 1/Tier 2 and OPSRP active members. This payroll is used to calculate UAL rates.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

Employer Contribution Rate

Consists of the normal cost rate and the UAL rates, plus adjustments for other items such as side account rate offsets.

Funded Status

The actuarial value of assets expressed as a percentage of the actuarial accrued liability.

Normal Cost

The annual cost allocated to the current year, under the actuarial cost method in use. The normal cost divided by the applicable payroll is the normal cost rate.

OPSRP Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for OPSRP active members. This payroll is used to calculate OPSRP normal cost rates.

Glossary

Pre-SLGRP Liability

The sum of Pre-SLGRP Pooled Liabilities and Transition Liabilities.

Pre-SLGRP Pooled Liability

The difference between the total UAL and the UAL attributable to the SLGRP for a pool of employers that joined the SLGRP. There are currently two pre-SLGRP pools. One was created for State Agencies and Community Colleges when the SLGRP was formed. The other one was created when the Local Government Rate Pool joined the SLGRP.

Present Value

Sometimes called “actuarial present value,” the estimated cost (as of the valuation date) of a series of future payments. The present value is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Rate Collar

A methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution rate and funded status.

Required Supplementary Information (RSI)

Schedules, statistical data, and other information that are an essential part of financial reporting and should be presented with, but are not part of, the basic financial statements of a governmental entity.

Statement No. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions.

Statement No. 68 of the Governmental Accounting Standards Board (GASB 68)

The accounting standard governing a state or local governmental employer’s accounting for pensions for fiscal years beginning after June 15, 2014.

Statement No. 75 of the Governmental Accounting Standards Board (GASB 75)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

The difference between the total UAL and the UAL attributable to the SLGRP for an individual employer that joined the SLGRP or the Local Government Rate Pool.

Unfunded Accrued Liability (UAL)

The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. The UAL is divided by combined valuation payroll and an amortization factor to determine an initial pre-collar UAL rate. The final UAL rate can be adjusted by the rate collar.



Milliman
111 SW Fifth Avenue, Suite 3700
Portland, OR 97204-3654
503 227 0634

This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

September 2016

Banks Fire District #13/2702
Oregon Public Employees Retirement System

Dear Sir or Madam:

As part of our engagement with the Oregon Public Employees Retirement Board, we performed a system-wide actuarial valuation of the Oregon Public Employees Retirement System (“PERS” or “the System”) as of December 31, 2015. The attached report, which is an informational supplement to the system-wide report, provides you with employer-specific contribution rates that will become effective July 1, 2017. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information will be provided separately by PERS and is not included in this report.

This report reflects the System's benefit provisions in effect as of December 31, 2015. The full development of the valuation results for the OPSRP and Retiree Health Insurance Account (RHIA) programs can be found in the separate system-wide actuarial valuation report. Costs of the IAP (Individual Account Program) are not included in this or the system-wide actuarial valuation report. Further, costs of pension obligation bond payments are not included in this or the system-wide actuarial valuation report.

If you have any questions about this report, please contact Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, OPSRP general service, and OPSRP police and fire payroll,
- Information to assist you in completing GASB 45 financial reporting requirements, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- Detailed development of Tier 1/Tier 2 valuation results,
- A brief summary of methods and assumptions, and
- A brief summary of any changes in System benefit provisions.

Additional information is provided in the system-wide actuarial valuation report, which is available at www.oregon.gov/PERS/Pages/section/financial_reports/financials.aspx.



September 2016
Banks Fire District #13/2702

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the System's staff. This information includes, but is not limited to, System benefit provisions as defined by statute, member census data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for the System have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer a reasonable estimate of anticipated experience affecting the System.

A valuation report is only an estimate of the System's financial condition as of a single date. It can neither predict the System's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of System benefits, only the timing of System contributions. While a valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: System experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the System's funded status); and changes in System benefit provisions or applicable law. Due to the limited scope of this assignment, we did not perform an analysis of the potential range of future measurements. The Board has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in September 2015.

Some of the actuarial computations presented in this report are for purposes of determining the contribution rates effective from July 2017 to June 2019 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.



September 2016
Banks Fire District #13/2702

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the System. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

Additional information is provided in the system-wide actuarial valuation report.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Larrabee".

Matt Larrabee, FSA, EA, MAAA
Principal and Consulting Actuary

A handwritten signature in black ink, appearing to read "Scott Preppernau".

Scott Preppernau, FSA, EA, MAAA
Principal and Consulting Actuary



ACTUARIAL VALUATION REPORT DECEMBER 31, 2015

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

INDEPENDENT EMPLOYERS

Banks Fire District #13 -- #2702

September 2016

CONTENTS

Executive Summary **1**

Employer Contribution Rates 1

Accounting Information 3

Principal Valuation Results 5

 ▪ Employer 5

 ▪ Tier 1/Tier 2 6

 ▪ OPSRP 7

 ▪ Retiree Healthcare 7

Side Account Information **8**

Tier 1/Tier 2 Valuation Results **10**

Assets 10

Liabilities 11

Unfunded Accrued Liability (UAL) 13

Contribution Rate Development 15

Data **20**

Brief Summary of Actuarial Methods and Assumptions **22**

Brief Summary of Changes in Plan Provisions **24**

Glossary **25**

Executive Summary

Milliman has prepared this report for Banks Fire District #13 to:

- Provide summary December 31, 2015 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2017 through June 30, 2019,
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2015, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45. GASB 68 information will be provided separately by PERS and is not included in this report.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2015 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Banks Fire District #13.

Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2017 through June 30, 2019 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

Employer Rates Effective July 1, 2017 for Banks Fire District #13

	Payroll		
	Tier 1/Tier 2	OPSRP General Service	OPSRP Police & Fire
Pension			
Normal cost rate	19.57%	8.02%	12.79%
Tier 1/Tier 2 UAL rate ¹	1.69%	1.69%	1.69%
OPSRP UAL rate	1.27%	1.27%	1.27%
Side account rate relief	0.00%	0.00%	0.00%
Net pension contribution rate	22.53%	10.98%	15.75%
Retiree Healthcare			
Normal cost rate	0.07%	0.00%	0.00%
UAL rate	0.43%	0.43%	0.43%
Net retiree healthcare rate	0.50%	0.43%	0.43%
Total net employer contribution rate	23.03%	11.41%	16.18%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate.

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 Biennium

The rate collar limits changes in contribution rates, but does not limit changes in rates for individual employers related to side accounts. The table below shows the possible minimum and maximum rates first effective as of July 1, 2019, which will depend on the funded status as of December 31, 2017. If the employer's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2015 is 68%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	21.26%	21.26%
Minimum 2019-2021 Rate	17.01%	12.76%
Maximum 2019-2021 Rate	25.51%	29.76%

Executive Summary

Accounting Information

Milliman is not an accounting or audit firm and cannot provide accounting advice. Milliman is not responsible for the interpretation of, or compliance with, accounting standards; citations to, and descriptions of accounting standards provided in this report are for reference purposes only. The information provided in this section is intended to assist the employer in completing its financial statements, but any accounting determination should be reviewed by your auditor.

Pension

In June 2012 the GASB issued Statement No. 68, which replaced GASB 27 and governs employer financial reporting for fiscal years beginning after June 15, 2014. The new standard replaced many of the key elements of the prior reporting requirements. Under the new rules, employers are required to record a balance sheet liability for their unfunded pension obligations. In addition, the timing and coordination of plan and employer reporting has changed under the new requirements. GASB 68 information for employers will be provided separately by PERS and is not included in this report.

Schedule of Funding Progress

Under GASB 27, the Schedule of Funding Progress for Tier 1/Tier 2 pension liabilities was reported in the Required Supplementary Information. This schedule is no longer required now that GASB 68 has replaced GASB 27. However, for additional information and the sake of historical comparison, the updated schedule is shown below for the last several valuations. For employers with side accounts, the actuarial value of assets in this Schedule includes the value of the employer's side accounts.

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (b - a)	Funded Ratio (a ÷ b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a) ÷ c)
12/31/2010	\$446,830	\$511,823	\$64,993	87%	\$159,008	41%
12/31/2011	458,745	561,533	102,788	82%	169,149	61%
12/31/2012	539,106	634,391	95,285	85%	153,539	62%
12/31/2013	568,184	715,252	147,068	79%	77,362	190%
12/31/2014	580,633	878,585	297,952	66%	186,062	160%
12/31/2015	578,918	846,963	268,045	68%	217,257	123%

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) is a cost-sharing pool under Statement No. 45 of the Governmental Accounting Standards Board (GASB 45). Consequently, each employer reports the contractually required contribution. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 was calculated as a part of this valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
	Tier 1 / Tier 2	OPSRP	
		General Service	Police & Fire
July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern employer financial reporting for retiree healthcare obligations for fiscal years beginning after June 15, 2017. In general, the changes required by GASB 75 parallel those that occurred for pension reporting when GASB 68 replaced GASB 27. Accounting information for reporting under GASB 75 will be provided separately and is not included in this report.

Executive Summary

Principal Valuation Results

A summary of principal valuation results from the current valuation and the prior valuation follows. Any changes in actuarial assumptions, methods or plan provisions between the two valuations are described later in this report. More detailed information can be found in the system-wide actuarial valuation report.

Banks Fire District #13

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
T1/T2 UAL	\$268,045	\$297,952
Allocated pooled OPSRP UAL	30,886	21,271
Side account	0	0
Net unfunded pension actuarial accrued liability	298,931	319,223
Combined valuation payroll	217,257	186,062
Net pension UAL as a percentage of payroll	138%	172%
Calculated side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	\$1,055	\$1,479

In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer’s combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.

Executive Summary

Principal Valuation Results (continued)

Tier 1/Tier 2

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
Normal cost	\$19,880	\$13,016
Tier 1/Tier 2 valuation payroll	101,569	75,903
Tier 1/Tier 2 pension normal cost rate	19.57%	17.15%
Tier 1/ Tier 2 Actuarial accrued liability	\$846,963	\$878,585
Actuarial asset value	578,918	580,633
Tier 1/Tier 2 Unfunded actuarial accrued liability	268,045	297,952
Tier 1/ Tier 2 Funded status	68%	66%
Combined valuation payroll	\$217,257	\$186,062
Tier 1/Tier 2 UAL as a percentage of payroll	123%	160%
Tier 1/Tier 2 UAL rate (includes Multnomah Fire District #10)	1.69%	4.79%
Tier 1/Tier 2 active members ¹	1	1
Tier 1/Tier 2 dormant members	0	1
Tier 1/Tier 2 retirees and beneficiaries	4	4

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
General service normal cost	\$342.2	\$301.3
OPSRP general service valuation payroll	4,266.9	3,720.4
General service normal cost rate	8.02%	8.10%
Police and fire normal cost	\$69.9	\$59.6
OPSRP police and fire valuation payroll	546.4	462.3
Police and fire normal cost rate	12.79%	12.90%
Actuarial accrued liability	\$3,742.5	\$3,064.1
Actuarial asset value	2,389.1	2,024.6
Unfunded actuarial accrued liability	1,353.5	1,039.5
Funded status	64%	66%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	14%	11%
UAL rate	1.27%	1.01%

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
RHIA		
Normal cost	\$3.3	\$3.5
Tier 1 / Tier 2 valuation payroll	4,730.8	4,933.1
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	\$465.6	\$468.4
Actuarial asset value	419.3	395.9
Unfunded actuarial accrued liability	46.3	72.5
Funded status	90%	85%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	0%	1%
UAL rate	0.43%	0.43%

Side Account Information

Reconciliation of Side Accounts

The following table reconciles the total side account from the beginning of the year to the end of the year. Side account transfers were calculated by PERS and made on a monthly basis. The amount of these transfers is shown in the table below.

All information in this table has been provided by PERS.

	New	Continuing	Total
1. Side account as of December 31, 2014	N/A		
2. Deposits made during 2015		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2015			
5. Side account earnings during 2015			
6. Side account as of December 31, 2015 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2015	December 31, 2014
Side account 1	\$0	\$0
Side account 2	0	0
Side account 3	0	0
Total	\$0	\$0

Development of Side Account Rate

The rate relief attributable to an employer's side account is determined by amortizing the side account balance on the valuation date over a fixed period, and expressing the result as a percentage of combined valuation payroll. For side accounts established prior to December 31, 2009, the fixed period ends December 31, 2027. For side accounts established at a later date, the fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2015	December 31, 2014
1. Total side account	\$0	\$0
2. Combined valuation payroll	217,257	186,062
3. Average Amortization factor	9.504	10.118
4. Total side account rate (-1. ÷ 2. ÷ 3.)¹	0.00%	0.00%

¹ For employers with more than one side account, the Total Side Account Rate is determined by calculating the rate on each side account separately and adding the rates together.

Tier 1/Tier 2 Valuation Results

Assets

A summary of the market value of pension assets, and reconciliation from the prior year are shown below.

Summary of Market Value of Tier 1/Tier 2 Pension Assets

	December 31, 2015	December 31, 2014
1. Member reserves	\$25,894	\$25,110
2. Employer reserves	276,750	249,128
3. Benefits in force reserve	276,274	306,395
4. Total market value of assets (1. + 2. + 3.)	\$578,918	\$580,633

The market value of member and employer reserves is provided by PERS. The benefits in force reserve provided by PERS is allocated each year among employers in proportion to their liabilities for retired members and beneficiaries.

Reconciliation of Tier 1/Tier 2 Pension Assets

	December 31, 2014 to December 31, 2015
1. Market value of assets at beginning of year	\$580,633
2. Regular employer contributions	22,572
3. Benefit payments and expense	(50,241)
4. Adjustments ¹	15,355
5. Interest credited	10,599
6. Total transferred from side accounts	0
7. Market value of assets at end of year (1. + 2. + 3. + 4. + 5. + 6.)	\$578,918

¹ Note the adjustment item above includes a reallocation of the benefits in force reserve, transfers to Multnomah Fire District #10, and other adjustments made by PERS.

Tier 1/Tier 2 Valuation Results

Liabilities

Normal Cost

The normal cost represents the value of benefits assigned to the next year of service by the actuarial cost method. If all actuarial assumptions are met, the normal cost represents the amount that would need to be contributed each year to fund plan benefits. Amounts shown below include assumed administrative expenses, which are allocated pro-rata based on normal cost.

Summary of Normal Cost by Tier/Member Classification

	December 31, 2015	December 31, 2014
Tier 1 Police & Fire	\$0	\$0
Tier 1 General Service	0	0
Tier 2 Police & Fire	19,880	13,016
Tier 2 General Service	0	0
Total	\$19,880	\$13,016

Change in Tier 1/Tier 2 Normal Cost

The following table shows the impact of the assumption, method, and plan changes on normal cost as of December 31, 2015.

	Before Changes	After Changes	Net Change
Normal Cost	\$19,880	\$19,880	\$0

Tier 1/Tier 2 Valuation Results

Liabilities

Actuarial Accrued Liability

The actuarial accrued liability represents the value of benefits allocated to service performed before the valuation date by the actuarial cost method. If all actuarial assumptions are met, the actuarial accrued liability represents the amount of assets that would need to be accumulated as of the valuation date to provide for the portion of benefits allocated to service already performed.

Summary of Actuarial Accrued Liability by Tier/Member Classification

	December 31, 2015	December 31, 2014
Active Members		
▪ Tier 1 Police & Fire	\$0	\$0
▪ Tier 1 General Service	21,223	19,996
▪ Tier 2 Police & Fire	190,290	232,171
▪ Tier 2 General Service	38,920	0
▪ Total Active Members	\$250,433	\$252,167
Dormant Members	0	32,020
Retired Members and Beneficiaries	596,530	594,398
Total Actuarial Accrued Liability	\$846,963	\$878,585

Change in Tier 1/Tier 2 Actuarial Accrued Liability

The following table shows the impact of the assumption, method, and plan changes on the actuarial accrued liability as of December 31, 2015.

	Before Changes	After Changes	Net Change
Actuarial Accrued Liability	\$846,963	\$846,963	\$0

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Summary of UAL

The UAL represents the difference between the assets accumulated and the liability attributed to prior years of service by the cost method.

	December 31, 2015	December 31, 2014
1. Actuarial accrued liability	\$846,963	\$878,585
2. Actuarial value of assets	578,918	580,633
3. Unfunded accrued liability (1. – 2.)	268,045	297,952
4. Funded percentage (2. ÷ 1.)	68%	66%
5. Combined valuation payroll	\$217,257	\$186,062
6. Unfunded accrued liability as % of combined valuation payroll (3. ÷ 5.)	123%	160%

Reconciliation of UAL Bases

Beginning with the December 31, 2013 actuarial valuation, each odd-year valuation establishes a 20-year closed-period amortization schedule for outstanding Tier 1/Tier 2 UAL amounts. Amortization schedules are calculated based on the total Tier 1/Tier 2 UAL as of that valuation date less the remaining unamortized balance of previously established Tier 1/Tier 2 UAL bases.

Amortization Base	UAL December 31, 2014	Payment	Interest	UAL December 31, 2015	Next Year's Payment
December 31, 2013	\$147,382	\$11,040	\$10,613	\$146,955	\$11,426
December 31, 2015	N/A	N/A	N/A	\$121,090	\$8,762
Total				\$268,045	\$20,188

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Actuarial Gain or Loss since Prior Valuation

The system-wide actuarial valuation report contains a detailed analysis of gains and losses since the last valuation. The table below shows the gain or loss for the individual employer.

1. Expected actuarial accrued liability	
a. Actuarial accrued liability at December 31, 2014	\$878,585
b. Normal cost at December 31, 2014 (excluding assumed expenses)	12,398
c. Benefit payments during 2015	(49,853)
d. Interest at 7.50% to December 31, 2015	64,489
e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)	905,619
f. Change in actuarial accrued liability due to assumption, method, and plan changes	0
g. Expected actuarial accrued liability at December 31, 2015 (e. + f.)	905,619
2. Actuarial accrued liability at December 31, 2015	846,963
3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)	58,656
4. Expected actuarial value of assets	
a. Actuarial value of assets at December 31, 2014	580,633
b. Contributions for 2015 ¹	22,572
c. Benefit payments and expenses during 2015	(50,241)
d. Interest at 7.50% to December 31, 2015	42,510
e. Expected actuarial value of assets at December 31, 2015 (a. + b. + c. + d.)	595,474
5. Actuarial value of assets at December 31, 2015	578,918
6. Gain/(loss) on actuarial value of assets (5. - 4.e.)	(16,555)
7. Total actuarial gain/(loss) (3. + 6.)	\$42,101

Unfunded Accrued Liability Reconciliation

A reconciliation of the Tier 1/Tier 2 UAL from December 31, 2014 is provided below.

1. UAL at December 31, 2014	\$297,952
2. Expected increase	12,194
3. Liability (gain)/loss	(58,656)
4. Asset (gain)/loss	16,555
5. Change due to changes in assumptions, methods, and plan provisions	0
6. UAL at December 31, 2015 (1. + 2. + 3. + 4. + 5.)	\$268,045

¹ Includes rate relief from side accounts.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Normal Cost Rate

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

Development of Tier 1/Tier 2 Normal Cost Rate

	December 31, 2015			December 31, 2014		
	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate
Tier 1 Police & Fire	\$0	\$0	0.00%	\$0	\$0	0.00%
Tier 1 General Service	0	0	0.00%	0	0	0.00%
Tier 2 Police & Fire	19,880	101,569	19.57%	13,016	75,903	17.15%
Tier 2 General Service	0	0	0.00%	0	0	0.00%
Total	\$19,880	\$101,569	19.57%	\$13,016	\$75,903	17.15%

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Development of Tier 1/Tier 2 UAL Rates

The UAL rate is determined by calculating the next year's scheduled payment to the UAL as a percentage of combined valuation payroll.

	December 31, 2015	December 31, 2014
1. Total Tier 1/Tier 2 UAL	\$268,045	\$297,952
2. Next year's Tier 1/Tier 2 UAL payment	20,188	21,935
3. Combined valuation payroll	217,257	186,062
4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)	9.29%	11.79%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	19.57%	17.15%
b. Tier 1/Tier 2 UAL rate	9.29%	11.79%
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate (a. + b. + c.)	29.01%	29.09%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Adjustments Due to Rate Collar and Minimum Rate Requirements

Employer contribution rates are generally limited to change by no more than the greater of 3 percent of payroll or 20 percent from the current contribution rate. However, if the funded percentage excluding side accounts is below 60 percent or above 140 percent the rate collar doubles in size. If the funded percentage excluding side accounts is between 60 and 70 percent or 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

The table below shows the current contribution rate for the period from July 1, 2015 through June 30, 2017, develops the maximum and minimum contribution rates effective July 1, 2017 based on the collar, and calculates the net adjustment due to the collar and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

1. Current net Tier 1/Tier 2 pension contribution rate		17.14%
2. Employer contribution rate attributable to side accounts		0.00%
3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)		17.14%
4. Size of rate collar		
a. 20% of current employer contribution rate (20% x 3.)		3.43%
b. Preliminary size of rate collar (maximum of 3% or a.)		3.43%
c. Funded percentage		68%
d. Size of rate collar (If c. < 60% or c. > 140%, 2 x b. If c. is 70%-130%, b. Otherwise, a graded rate between b. and 2 x b.)		4.12%
5. July 1, 2017 minimum employer contribution rate	(3. – 4.d. but not < 0%)	13.02%
6. July 1, 2017 maximum employer contribution rate	(3. + 4.d.)	21.26%
7. July 1, 2017 total pension rate, before adjustment		29.01%
8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)		(7.75%)
9. July 1, 2017 Tier 1/Tier 2 UAL rate, before collar		9.29%
10. July 1, 2017 Tier 1/Tier 2 UAL rate, after collar	(8. + 9.)	1.54%
11. July 1, 2017 Tier 1/Tier 2 pension rate, after collar		21.26%
12. Tier 1/Tier 2 retiree healthcare rate		0.50%
13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)		0.00%
14. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment		19.57%
15. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)		19.57%
16. July 1, 2017 Tier 1/Tier 2 pension rate, after minimum adjustment	(11. + 13.)	21.26%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Post-Rate Collar)

The table below summarizes the employer's pension contribution rate for Tier 1 /Tier 2 after adjustments for the rate collar and the 6 percent of payroll minimum employer contribution rate.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	19.57%	17.15%
b. Tier 1/Tier 2 UAL rate	1.54%	4.64%
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate <i>(a. + b. + c., minimum of 5.50%)</i>	21.26%	21.94%

Data

Demographic Information

Employer Valuation Payroll

	General Service	Police & Fire	Total
Tier 1	\$0	\$0	\$0
Tier 2	0	101,569	101,569
Tier 1/Tier 2 valuation payroll	0	101,569	101,569
OPSRP valuation payroll	0	115,688	115,688
Combined valuation payroll	\$0	\$217,257	\$217,257

Employer Member Census

	December 31							
	2015				2014			
	Tier 1	Tier 2	OPSRP	Total	Tier 1	Tier 2	OPSRP	Total
Active Members ¹								
General Service	0	0	0	0	0	0	0	0
Police & Fire	0	1	2	3	0	1	2	3
Total	0	1	2	3	0	1	2	3
Active Members with previous service segments with the employer								
General Service	1	1	N/A	2	1	0	N/A	1
Police & Fire	0	1	N/A	1	0	0	N/A	0
Total	1	2	N/A	3	1	0	N/A	1
Dormant Members								
General Service	0	0	0	0	0	1	0	1
Police & Fire	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	1	0	1
Retired Members and Beneficiaries								
General Service	1	0	0	1	1	0	0	1
Police & Fire	3	0	0	3	3	0	0	3
Total	4	0	0	4	4	0	0	4
Grand Total Number of Members	5	3	2	10	5	2	2	9

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Data

Demographic Information (continued)

Employer Tier 1/Tier 2 Active Members as of December 31, 2015

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
<20										
20-24										
25-29										
30-34										
35-39										
40-44										
45-49										
50-54				1						1
55-59										
60-64										
65-69										
70-74										
75+										
Total	0	0	0	1	0	0	0	0	0	1

Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2015

Dormant Members			Retired Members and Beneficiaries		
Age	Count	Average Deferred Monthly Benefit	Age	Count	Average Monthly Benefit
<20			<45		
20-24			45-49		
25-29			50-54		
30-34			55-59	1	1,621
35-39			60-64		
40-44			65-69	1	527
45-49			70-74	1	956
50-54			75-79	1	525
55-59			80-84		
60-64			85-89		
65-69			90-94		
70-74			95-99		
75+			100+		
Total			Total	4	907

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2015 valuation can be found in the system-wide actuarial valuation report.

Actuarial Methods and Valuation Procedures

A brief summary of the methods used in this valuation is shown below:

<i>Actuarial cost method</i>	Entry Age Normal.
<i>Amortization Method</i>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. Gains and losses between subsequent odd-year valuations will be amortized as a level percentage of projected combined valuation payroll over a closed 20 year period.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.</p>

Economic Assumptions

A brief summary of the key economic assumptions used in this valuation is shown below:

<i>Net investment return</i>	7.50% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.50% compounded annually on members' regular account balances.</p> <p>7.50% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 6.3% in 2016 to 4.4% in 2094.
<i>Administrative Expenses</i>	<p>\$5.5 million added to OPSRP normal cost.</p> <p>\$33.0 million added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2014 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

There were no changes in actuarial methods and allocation procedures since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA actuarial methods and allocation procedures is provided as part of the system-wide valuation report.

Changes in Assumptions

There were no changes in assumptions since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA assumptions is provided as part of the system-wide valuation report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Glossary

Actuarial Accrued Liability

The portion of the present value of prospective benefits allocated to service and compensation before the valuation date in accordance with the actuarial cost method.

Actuarial Asset Value

The value of assets used in calculating the required contributions. The actuarial asset value may be equal to the fair market value of assets, or it may spread the recognition of certain investment gains or losses over a period of years in accordance with an asset valuation method.

Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disablement and retirement; rates of investment earnings and other relevant items.

Actuarial Cost Method

Sometimes called "funding method," a particular technique used by actuaries to establish the amount and incidence of the annual actuarial cost of pension plan benefits, or normal cost, and the related unfunded actuarial accrued liability. Ordinarily, the annual contribution to the plan comprises the normal cost and an amount for amortization of the unfunded actuarial accrued liability.

Actuarial Gain or (Loss)

A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions, during the period between two actuarial valuation dates, as determined in accordance with a particular actuarial cost method.

Combined Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for both Tier 1/Tier 2 and OPSRP active members. This payroll is used to calculate UAL rates.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

Employer Contribution Rate

Consists of the normal cost rate and the UAL rates, plus adjustments for other items such as side account rate offsets.

Funded Status

The actuarial value of assets expressed as a percentage of the actuarial accrued liability.

Normal Cost

The annual cost allocated to the current year, under the actuarial cost method in use. The normal cost divided by the applicable payroll is the normal cost rate.

OPSRP Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for OPSRP active members. This payroll is used to calculate OPSRP normal cost rates.

Glossary

Pre-SLGRP Liability

The sum of Pre-SLGRP Pooled Liabilities and Transition Liabilities.

Pre-SLGRP Pooled Liability

The difference between the total UAL and the UAL attributable to the SLGRP for a pool of employers that joined the SLGRP. There are currently two pre-SLGRP pools. One was created for State Agencies and Community Colleges when the SLGRP was formed. The other one was created when the Local Government Rate Pool joined the SLGRP.

Present Value

Sometimes called “actuarial present value,” the estimated cost (as of the valuation date) of a series of future payments. The present value is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Rate Collar

A methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution rate and funded status.

Required Supplementary Information (RSI)

Schedules, statistical data, and other information that are an essential part of financial reporting and should be presented with, but are not part of, the basic financial statements of a governmental entity.

Statement No. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions.

Statement No. 68 of the Governmental Accounting Standards Board (GASB 68)

The accounting standard governing a state or local governmental employer’s accounting for pensions for fiscal years beginning after June 15, 2014.

Statement No. 75 of the Governmental Accounting Standards Board (GASB 75)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

The difference between the total UAL and the UAL attributable to the SLGRP for an individual employer that joined the SLGRP or the Local Government Rate Pool.

Unfunded Accrued Liability (UAL)

The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. The UAL is divided by combined valuation payroll and an amortization factor to determine an initial pre-collar UAL rate. The final UAL rate can be adjusted by the rate collar.



Milliman
111 SW Fifth Avenue, Suite 3700
Portland, OR 97204-3654
503 227 0634

This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

September 2016

Bend Parks & Recreation/2596
Oregon Public Employees Retirement System

Dear Sir or Madam:

As part of our engagement with the Oregon Public Employees Retirement Board, we performed a system-wide actuarial valuation of the Oregon Public Employees Retirement System (“PERS” or “the System”) as of December 31, 2015. The attached report, which is an informational supplement to the system-wide report, provides you with employer-specific contribution rates that will become effective July 1, 2017. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information will be provided separately by PERS and is not included in this report.

This report reflects the System's benefit provisions in effect as of December 31, 2015. The full development of the valuation results for the OPSRP and Retiree Health Insurance Account (RHIA) programs can be found in the separate system-wide actuarial valuation report. Costs of the IAP (Individual Account Program) are not included in this or the system-wide actuarial valuation report. Further, costs of pension obligation bond payments are not included in this or the system-wide actuarial valuation report.

If you have any questions about this report, please contact Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, OPSRP general service, and OPSRP police and fire payroll,
- Information to assist you in completing GASB 45 financial reporting requirements, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- Detailed development of Tier 1/Tier 2 valuation results,
- A brief summary of methods and assumptions, and
- A brief summary of any changes in System benefit provisions.

Additional information is provided in the system-wide actuarial valuation report, which is available at www.oregon.gov/PERS/Pages/section/financial_reports/financials.aspx.

September 2016
Bend Parks & Recreation/2596

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the System's staff. This information includes, but is not limited to, System benefit provisions as defined by statute, member census data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for the System have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer a reasonable estimate of anticipated experience affecting the System.

A valuation report is only an estimate of the System's financial condition as of a single date. It can neither predict the System's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of System benefits, only the timing of System contributions. While a valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: System experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the System's funded status); and changes in System benefit provisions or applicable law. Due to the limited scope of this assignment, we did not perform an analysis of the potential range of future measurements. The Board has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in September 2015.

Some of the actuarial computations presented in this report are for purposes of determining the contribution rates effective from July 2017 to June 2019 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.



September 2016
Bend Parks & Recreation/2596

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the System. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

Additional information is provided in the system-wide actuarial valuation report.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Larrabee".

Matt Larrabee, FSA, EA, MAAA
Principal and Consulting Actuary

A handwritten signature in black ink, appearing to read "Scott Preppernau".

Scott Preppernau, FSA, EA, MAAA
Principal and Consulting Actuary



ACTUARIAL VALUATION REPORT DECEMBER 31, 2015

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

INDEPENDENT EMPLOYERS

Bend Parks & Recreation -- #2596

September 2016

CONTENTS

Executive Summary **1**

Employer Contribution Rates 1

Accounting Information 3

Principal Valuation Results 5

 ▪ Employer 5

 ▪ Tier 1/Tier 2 6

 ▪ OPSRP 7

 ▪ Retiree Healthcare 7

Side Account Information **8**

Tier 1/Tier 2 Valuation Results **10**

Assets 10

Liabilities 11

Unfunded Accrued Liability (UAL) 13

Contribution Rate Development 15

Data **20**

Brief Summary of Actuarial Methods and Assumptions **22**

Brief Summary of Changes in Plan Provisions **24**

Glossary **25**

Executive Summary

Milliman has prepared this report for Bend Parks & Recreation to:

- Provide summary December 31, 2015 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2017 through June 30, 2019,
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2015, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45. GASB 68 information will be provided separately by PERS and is not included in this report.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2015 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Bend Parks & Recreation.

Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2017 through June 30, 2019 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

Employer Rates Effective July 1, 2017 for Bend Parks & Recreation

	Payroll		
	Tier 1/Tier 2	OPSRP General Service	OPSRP Police & Fire
Pension			
Normal cost rate	13.09%	8.02%	12.79%
Tier 1/Tier 2 UAL rate ¹	1.22%	1.22%	1.22%
OPSRP UAL rate	1.27%	1.27%	1.27%
Side account rate relief	0.00%	0.00%	0.00%
Net pension contribution rate	15.58%	10.51%	15.28%
Retiree Healthcare			
Normal cost rate	0.07%	0.00%	0.00%
UAL rate	0.43%	0.43%	0.43%
Net retiree healthcare rate	0.50%	0.43%	0.43%
Total net employer contribution rate	16.08%	10.94%	15.71%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate.

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 Biennium

The rate collar limits changes in contribution rates, but does not limit changes in rates for individual employers related to side accounts. The table below shows the possible minimum and maximum rates first effective as of July 1, 2019, which will depend on the funded status as of December 31, 2017. If the employer's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2015 is 74%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	14.31%	14.31%
Minimum 2019-2021 Rate	11.31%	8.31%
Maximum 2019-2021 Rate	17.31%	20.31%

Executive Summary

Accounting Information

Milliman is not an accounting or audit firm and cannot provide accounting advice. Milliman is not responsible for the interpretation of, or compliance with, accounting standards; citations to, and descriptions of accounting standards provided in this report are for reference purposes only. The information provided in this section is intended to assist the employer in completing its financial statements, but any accounting determination should be reviewed by your auditor.

Pension

In June 2012 the GASB issued Statement No. 68, which replaced GASB 27 and governs employer financial reporting for fiscal years beginning after June 15, 2014. The new standard replaced many of the key elements of the prior reporting requirements. Under the new rules, employers are required to record a balance sheet liability for their unfunded pension obligations. In addition, the timing and coordination of plan and employer reporting has changed under the new requirements. GASB 68 information for employers will be provided separately by PERS and is not included in this report.

Schedule of Funding Progress

Under GASB 27, the Schedule of Funding Progress for Tier 1/Tier 2 pension liabilities was reported in the Required Supplementary Information. This schedule is no longer required now that GASB 68 has replaced GASB 27. However, for additional information and the sake of historical comparison, the updated schedule is shown below for the last several valuations. For employers with side accounts, the actuarial value of assets in this Schedule includes the value of the employer's side accounts.

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (b - a)	Funded Ratio (a ÷ b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a) ÷ c)
12/31/2010	\$11,873,968	\$12,796,796	\$922,828	93%	\$5,742,374	16%
12/31/2011	11,574,356	13,624,264	2,049,908	85%	5,084,185	40%
12/31/2012	12,908,743	14,482,667	1,573,924	89%	5,137,769	31%
12/31/2013	14,514,102	15,625,224	1,111,122	93%	5,832,411	19%
12/31/2014	15,166,419	18,905,398	3,738,979	80%	6,929,756	54%
12/31/2015	15,168,590	20,375,765	5,207,175	74%	7,132,955	73%

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) is a cost-sharing pool under Statement No. 45 of the Governmental Accounting Standards Board (GASB 45). Consequently, each employer reports the contractually required contribution. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 was calculated as a part of this valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
	Tier 1 / Tier 2	OPSRP	
		General Service	Police & Fire
July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern employer financial reporting for retiree healthcare obligations for fiscal years beginning after June 15, 2017. In general, the changes required by GASB 75 parallel those that occurred for pension reporting when GASB 68 replaced GASB 27. Accounting information for reporting under GASB 75 will be provided separately and is not included in this report.

Executive Summary

Principal Valuation Results

A summary of principal valuation results from the current valuation and the prior valuation follows. Any changes in actuarial assumptions, methods or plan provisions between the two valuations are described later in this report. More detailed information can be found in the system-wide actuarial valuation report.

Bend Parks & Recreation

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
T1/T2 UAL	\$5,207,175	\$3,738,979
Allocated pooled OPSRP UAL	1,014,049	792,222
Side account	0	0
Net unfunded pension actuarial accrued liability	6,221,224	4,531,201
Combined valuation payroll	7,132,955	6,929,756
Net pension UAL as a percentage of payroll	87%	65%
Calculated side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	\$34,635	\$55,082

In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer's combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.

Executive Summary

Principal Valuation Results (continued)

Tier 1/Tier 2

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
Normal cost	\$368,584	\$417,185
Tier 1/Tier 2 valuation payroll	2,816,573	3,068,970
Tier 1/Tier 2 pension normal cost rate	13.09%	13.59%
Tier 1/ Tier 2 Actuarial accrued liability	\$20,375,765	\$18,905,398
Actuarial asset value	15,168,590	15,166,419
Tier 1/Tier 2 Unfunded actuarial accrued liability	5,207,175	3,738,979
Tier 1/ Tier 2 Funded status	74%	80%
Combined valuation payroll	\$7,132,955	\$6,929,756
Tier 1/Tier 2 UAL as a percentage of payroll	73%	54%
Tier 1/Tier 2 UAL rate (includes Multnomah Fire District #10)	1.22%	0.72%
Tier 1/Tier 2 active members ¹	45	51
Tier 1/Tier 2 dormant members	72	73
Tier 1/Tier 2 retirees and beneficiaries	89	78

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
General service normal cost	\$342.2	\$301.3
OPSRP general service valuation payroll	4,266.9	3,720.4
General service normal cost rate	8.02%	8.10%
Police and fire normal cost	\$69.9	\$59.6
OPSRP police and fire valuation payroll	546.4	462.3
Police and fire normal cost rate	12.79%	12.90%
Actuarial accrued liability	\$3,742.5	\$3,064.1
Actuarial asset value	2,389.1	2,024.6
Unfunded actuarial accrued liability	1,353.5	1,039.5
Funded status	64%	66%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	14%	11%
UAL rate	1.27%	1.01%

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
RHIA		
Normal cost	\$3.3	\$3.5
Tier 1 / Tier 2 valuation payroll	4,730.8	4,933.1
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	\$465.6	\$468.4
Actuarial asset value	419.3	395.9
Unfunded actuarial accrued liability	46.3	72.5
Funded status	90%	85%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	0%	1%
UAL rate	0.43%	0.43%

Side Account Information

Reconciliation of Side Accounts

The following table reconciles the total side account from the beginning of the year to the end of the year. Side account transfers were calculated by PERS and made on a monthly basis. The amount of these transfers is shown in the table below.

All information in this table has been provided by PERS.

	New	Continuing	Total
1. Side account as of December 31, 2014	N/A		
2. Deposits made during 2015		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2015			
5. Side account earnings during 2015			
6. Side account as of December 31, 2015 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2015	December 31, 2014
Side account 1	\$0	\$0
Side account 2	0	0
Side account 3	0	0
Total	\$0	\$0

Development of Side Account Rate

The rate relief attributable to an employer's side account is determined by amortizing the side account balance on the valuation date over a fixed period, and expressing the result as a percentage of combined valuation payroll. For side accounts established prior to December 31, 2009, the fixed period ends December 31, 2027. For side accounts established at a later date, the fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2015	December 31, 2014
1. Total side account	\$0	\$0
2. Combined valuation payroll	7,132,955	6,929,756
3. Average Amortization factor	9.504	10.118
4. Total side account rate (-1. ÷ 2. ÷ 3.)¹	0.00%	0.00%

¹ For employers with more than one side account, the Total Side Account Rate is determined by calculating the rate on each side account separately and adding the rates together.

Tier 1/Tier 2 Valuation Results

Assets

A summary of the market value of pension assets, and reconciliation from the prior year are shown below.

Summary of Market Value of Tier 1/Tier 2 Pension Assets

	December 31, 2015	December 31, 2014
1. Member reserves	\$2,780,326	\$2,860,116
2. Employer reserves	8,178,539	8,449,807
3. Benefits in force reserve	4,209,725	3,856,497
4. Total market value of assets (1. + 2. + 3.)	\$15,168,590	\$15,166,419

The market value of member and employer reserves is provided by PERS. The benefits in force reserve provided by PERS is allocated each year among employers in proportion to their liabilities for retired members and beneficiaries.

Reconciliation of Tier 1/Tier 2 Pension Assets

	December 31, 2014 to December 31, 2015
1. Market value of assets at beginning of year	\$15,166,419
2. Regular employer contributions	268,871
3. Benefit payments and expense	(765,544)
4. Adjustments ¹	94,998
5. Interest credited	403,845
6. Total transferred from side accounts	0
7. Market value of assets at end of year (1. + 2. + 3. + 4. + 5. + 6.)	\$15,168,590

¹ Note the adjustment item above includes a reallocation of the benefits in force reserve, transfers to Multnomah Fire District #10, and other adjustments made by PERS.

Tier 1/Tier 2 Valuation Results

Liabilities

Normal Cost

The normal cost represents the value of benefits assigned to the next year of service by the actuarial cost method. If all actuarial assumptions are met, the normal cost represents the amount that would need to be contributed each year to fund plan benefits. Amounts shown below include assumed administrative expenses, which are allocated pro-rata based on normal cost.

Summary of Normal Cost by Tier/Member Classification

	December 31, 2015	December 31, 2014
Tier 1 Police & Fire	\$0	\$0
Tier 1 General Service	210,252	245,608
Tier 2 Police & Fire	0	0
Tier 2 General Service	158,332	171,577
Total	\$368,584	\$417,185

Change in Tier 1/Tier 2 Normal Cost

The following table shows the impact of the assumption, method, and plan changes on normal cost as of December 31, 2015.

	Before Changes	After Changes	Net Change
Normal Cost	\$368,584	\$368,584	\$0

Tier 1/Tier 2 Valuation Results

Liabilities

Actuarial Accrued Liability

The actuarial accrued liability represents the value of benefits allocated to service performed before the valuation date by the actuarial cost method. If all actuarial assumptions are met, the actuarial accrued liability represents the amount of assets that would need to be accumulated as of the valuation date to provide for the portion of benefits allocated to service already performed.

Summary of Actuarial Accrued Liability by Tier/Member Classification

	December 31, 2015	December 31, 2014
Active Members		
▪ Tier 1 Police & Fire	\$0	\$0
▪ Tier 1 General Service	5,385,375	5,947,229
▪ Tier 2 Police & Fire	0	0
▪ Tier 2 General Service	3,091,003	3,248,290
▪ Total Active Members	\$8,476,378	\$9,195,519
Dormant Members	2,809,786	2,228,372
Retired Members and Beneficiaries	9,089,601	7,481,507
Total Actuarial Accrued Liability	\$20,375,765	\$18,905,398

Change in Tier 1/Tier 2 Actuarial Accrued Liability

The following table shows the impact of the assumption, method, and plan changes on the actuarial accrued liability as of December 31, 2015.

	Before Changes	After Changes	Net Change
Actuarial Accrued Liability	\$20,375,765	\$20,375,765	\$0

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Summary of UAL

The UAL represents the difference between the assets accumulated and the liability attributed to prior years of service by the cost method.

	December 31, 2015	December 31, 2014
1. Actuarial accrued liability	\$20,375,765	\$18,905,398
2. Actuarial value of assets	15,168,590	15,166,419
3. Unfunded accrued liability (1. – 2.)	5,207,175	3,738,979
4. Funded percentage (2. ÷ 1.)	74%	80%
5. Combined valuation payroll	\$7,132,955	\$6,929,756
6. Unfunded accrued liability as % of combined valuation payroll (3. ÷ 5.)	73%	54%

Reconciliation of UAL Bases

Beginning with the December 31, 2013 actuarial valuation, each odd-year valuation establishes a 20-year closed-period amortization schedule for outstanding Tier 1/Tier 2 UAL amounts. Amortization schedules are calculated based on the total Tier 1/Tier 2 UAL as of that valuation date less the remaining unamortized balance of previously established Tier 1/Tier 2 UAL bases.

Amortization Base	UAL December 31, 2014	Payment	Interest	UAL December 31, 2015	Next Year's Payment
December 31, 2013	\$1,113,493	\$83,408	\$80,180	\$1,110,265	\$86,328
December 31, 2015	N/A	N/A	N/A	\$4,096,910	\$296,448
Total				\$5,207,175	\$382,776

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Actuarial Gain or Loss since Prior Valuation

The system-wide actuarial valuation report contains a detailed analysis of gains and losses since the last valuation. The table below shows the gain or loss for the individual employer.

1. Expected actuarial accrued liability	
a. Actuarial accrued liability at December 31, 2014	\$18,905,398
b. Normal cost at December 31, 2014 (excluding assumed expenses)	399,166
c. Benefit payments during 2015	(759,631)
d. Interest at 7.50% to December 31, 2015	1,404,387
e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)	19,949,320
f. Change in actuarial accrued liability due to assumption, method, and plan changes	0
g. Expected actuarial accrued liability at December 31, 2015 (e. + f.)	19,949,320
2. Actuarial accrued liability at December 31, 2015	20,375,765
3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)	(426,445)
4. Expected actuarial value of assets	
a. Actuarial value of assets at December 31, 2014	15,166,419
b. Contributions for 2015 ¹	268,871
c. Benefit payments and expenses during 2015	(765,544)
d. Interest at 7.50% to December 31, 2015	1,118,856
e. Expected actuarial value of assets at December 31, 2015 (a. + b. + c. + d.)	15,788,603
5. Actuarial value of assets at December 31, 2015	15,168,590
6. Gain/(loss) on actuarial value of assets (5. - 4.e.)	(620,013)
7. Total actuarial gain/(loss) (3. + 6.)	(\$1,046,458)

Unfunded Accrued Liability Reconciliation

A reconciliation of the Tier 1/Tier 2 UAL from December 31, 2014 is provided below.

1. UAL at December 31, 2014	\$3,738,979
2. Expected increase	421,738
3. Liability (gain)/loss	426,445
4. Asset (gain)/loss	620,013
5. Change due to changes in assumptions, methods, and plan provisions	0
6. UAL at December 31, 2015 (1. + 2. + 3. + 4. + 5.)	\$5,207,175

¹ Includes rate relief from side accounts.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Normal Cost Rate

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

Development of Tier 1/Tier 2 Normal Cost Rate

	December 31, 2015			December 31, 2014		
	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate
Tier 1 Police & Fire	\$0	\$0	0.00%	\$0	\$0	0.00%
Tier 1 General Service	210,252	1,435,132	14.65%	245,608	1,623,733	15.13%
Tier 2 Police & Fire	0	0	0.00%	0	0	0.00%
Tier 2 General Service	158,332	1,381,441	11.46%	171,577	1,445,237	11.87%
Total	\$368,584	\$2,816,573	13.09%	\$417,185	\$3,068,970	13.59%

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Development of Tier 1/Tier 2 UAL Rates

The UAL rate is determined by calculating the next year's scheduled payment to the UAL as a percentage of combined valuation payroll.

	December 31, 2015	December 31, 2014
1. Total Tier 1/Tier 2 UAL	\$5,207,175	\$3,738,979
2. Next year's Tier 1/Tier 2 UAL payment	382,776	273,385
3. Combined valuation payroll	7,132,955	6,929,756
4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)	5.37%	3.95%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	13.09%	13.59%
b. Tier 1/Tier 2 UAL rate	5.37%	3.95%
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate (a. + b. + c.)	18.61%	17.69%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Adjustments Due to Rate Collar and Minimum Rate Requirements

Employer contribution rates are generally limited to change by no more than the greater of 3 percent of payroll or 20 percent from the current contribution rate. However, if the funded percentage excluding side accounts is below 60 percent or above 140 percent the rate collar doubles in size. If the funded percentage excluding side accounts is between 60 and 70 percent or 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

The table below shows the current contribution rate for the period from July 1, 2015 through June 30, 2017, develops the maximum and minimum contribution rates effective July 1, 2017 based on the collar, and calculates the net adjustment due to the collar and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

1. Current net Tier 1/Tier 2 pension contribution rate		11.31%
2. Employer contribution rate attributable to side accounts		0.00%
3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)		11.31%
4. Size of rate collar		
a. 20% of current employer contribution rate (20% x 3.)		2.26%
b. Preliminary size of rate collar (maximum of 3% or a.)		3.00%
c. Funded percentage		74%
d. Size of rate collar (If c. < 60% or c. > 140%, 2 x b. If c. is 70%-130%, b. Otherwise, a graded rate between b. and 2 x b.)		3.00%
5. July 1, 2017 minimum employer contribution rate	(3. – 4.d. but not < 0%)	8.31%
6. July 1, 2017 maximum employer contribution rate	(3. + 4.d.)	14.31%
7. July 1, 2017 total pension rate, before adjustment		18.61%
8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)		(4.30%)
9. July 1, 2017 Tier 1/Tier 2 UAL rate, before collar		5.37%
10. July 1, 2017 Tier 1/Tier 2 UAL rate, after collar	(8. + 9.)	1.07%
11. July 1, 2017 Tier 1/Tier 2 pension rate, after collar		14.31%
12. Tier 1/Tier 2 retiree healthcare rate		0.50%
13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)		0.00%
14. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment		13.09%
15. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)		13.09%
16. July 1, 2017 Tier 1/Tier 2 pension rate, after minimum adjustment	(11. + 13.)	14.31%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Post-Rate Collar)

The table below summarizes the employer's pension contribution rate for Tier 1 /Tier 2 after adjustments for the rate collar and the 6 percent of payroll minimum employer contribution rate.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	13.09%	13.59%
b. Tier 1/Tier 2 UAL rate	1.07%	0.57%
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate <i>(a. + b. + c., minimum of 5.50%)</i>	14.31%	14.31%

Data

Demographic Information

Employer Valuation Payroll

	General Service	Police & Fire	Total
Tier 1	\$1,435,132	\$0	\$1,435,132
Tier 2	1,381,441	0	1,381,441
Tier 1/Tier 2 valuation payroll	2,816,573	0	2,816,573
OPSRP valuation payroll	4,316,382	0	4,316,382
Combined valuation payroll	\$7,132,955	\$0	\$7,132,955

Employer Member Census

	December 31							
	2015				2014			
	Tier 1	Tier 2	OPSRP	Total	Tier 1	Tier 2	OPSRP	Total
Active Members ¹								
General Service	21	24	129	174	25	26	117	168
Police & Fire	0	0	0	0	0	0	0	0
Total	21	24	129	174	25	26	117	168
Active Members with previous service segments with the employer								
General Service	19	51	N/A	70	21	52	N/A	73
Police & Fire	0	0	N/A	0	0	0	N/A	0
Total	19	51	N/A	70	21	52	N/A	73
Dormant Members								
General Service	32	40	24	96	31	42	20	93
Police & Fire	0	0	0	0	0	0	0	0
Total	32	40	24	96	31	42	20	93
Retired Members and Beneficiaries								
General Service	76	13	3	92	71	7	2	80
Police & Fire	0	0	0	0	0	0	0	0
Total	76	13	3	92	71	7	2	80
Grand Total Number of Members	148	128	156	432	148	127	139	414

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Data

Demographic Information (continued)

Employer Tier 1/Tier 2 Active Members as of December 31, 2015

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
<20										
20-24										
25-29										
30-34			1							1
35-39			1	1						2
40-44			5	2	1					8
45-49		2	3		4					9
50-54			2	2	1	2				7
55-59			4	3	3	1				11
60-64			2		2	1	1			6
65-69					1					1
70-74										
75+										
Total	0	2	18	8	12	4	1	0	0	45

Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2015

Dormant Members			Retired Members and Beneficiaries		
Age	Count	Average Deferred Monthly Benefit	Age	Count	Average Monthly Benefit
<20			<45		
20-24			45-49		
25-29			50-54	1	42
30-34	5	204	55-59	9	729
35-39	2	91	60-64	29	683
40-44	11	271	65-69	30	653
45-49	11	335	70-74	17	536
50-54	12	410	75-79	1	259
55-59	10	134	80-84	1	597
60-64	13	295	85-89	1	622
65-69	8	1,075	90-94		
70-74			95-99		
75+			100+		
Total	72	369	Total	89	636

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2015 valuation can be found in the system-wide actuarial valuation report.

Actuarial Methods and Valuation Procedures

A brief summary of the methods used in this valuation is shown below:

<i>Actuarial cost method</i>	Entry Age Normal.
<i>Amortization Method</i>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. Gains and losses between subsequent odd-year valuations will be amortized as a level percentage of projected combined valuation payroll over a closed 20 year period.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.</p>

Economic Assumptions

A brief summary of the key economic assumptions used in this valuation is shown below:

<i>Net investment return</i>	7.50% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.50% compounded annually on members' regular account balances.</p> <p>7.50% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 6.3% in 2016 to 4.4% in 2094.
<i>Administrative Expenses</i>	<p>\$5.5 million added to OPSRP normal cost.</p> <p>\$33.0 million added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2014 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

There were no changes in actuarial methods and allocation procedures since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA actuarial methods and allocation procedures is provided as part of the system-wide valuation report.

Changes in Assumptions

There were no changes in assumptions since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA assumptions is provided as part of the system-wide valuation report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Glossary

Actuarial Accrued Liability

The portion of the present value of prospective benefits allocated to service and compensation before the valuation date in accordance with the actuarial cost method.

Actuarial Asset Value

The value of assets used in calculating the required contributions. The actuarial asset value may be equal to the fair market value of assets, or it may spread the recognition of certain investment gains or losses over a period of years in accordance with an asset valuation method.

Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disablement and retirement; rates of investment earnings and other relevant items.

Actuarial Cost Method

Sometimes called “funding method,” a particular technique used by actuaries to establish the amount and incidence of the annual actuarial cost of pension plan benefits, or normal cost, and the related unfunded actuarial accrued liability. Ordinarily, the annual contribution to the plan comprises the normal cost and an amount for amortization of the unfunded actuarial accrued liability.

Actuarial Gain or (Loss)

A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions, during the period between two actuarial valuation dates, as determined in accordance with a particular actuarial cost method.

Combined Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for both Tier 1/Tier 2 and OPSRP active members. This payroll is used to calculate UAL rates.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

Employer Contribution Rate

Consists of the normal cost rate and the UAL rates, plus adjustments for other items such as side account rate offsets.

Funded Status

The actuarial value of assets expressed as a percentage of the actuarial accrued liability.

Normal Cost

The annual cost allocated to the current year, under the actuarial cost method in use. The normal cost divided by the applicable payroll is the normal cost rate.

OPSRP Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for OPSRP active members. This payroll is used to calculate OPSRP normal cost rates.

Glossary

Pre-SLGRP Liability

The sum of Pre-SLGRP Pooled Liabilities and Transition Liabilities.

Pre-SLGRP Pooled Liability

The difference between the total UAL and the UAL attributable to the SLGRP for a pool of employers that joined the SLGRP. There are currently two pre-SLGRP pools. One was created for State Agencies and Community Colleges when the SLGRP was formed. The other one was created when the Local Government Rate Pool joined the SLGRP.

Present Value

Sometimes called “actuarial present value,” the estimated cost (as of the valuation date) of a series of future payments. The present value is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Rate Collar

A methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution rate and funded status.

Required Supplementary Information (RSI)

Schedules, statistical data, and other information that are an essential part of financial reporting and should be presented with, but are not part of, the basic financial statements of a governmental entity.

Statement No. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions.

Statement No. 68 of the Governmental Accounting Standards Board (GASB 68)

The accounting standard governing a state or local governmental employer’s accounting for pensions for fiscal years beginning after June 15, 2014.

Statement No. 75 of the Governmental Accounting Standards Board (GASB 75)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

The difference between the total UAL and the UAL attributable to the SLGRP for an individual employer that joined the SLGRP or the Local Government Rate Pool.

Unfunded Accrued Liability (UAL)

The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. The UAL is divided by combined valuation payroll and an amortization factor to determine an initial pre-collar UAL rate. The final UAL rate can be adjusted by the rate collar.



Milliman
111 SW Fifth Avenue, Suite 3700
Portland, OR 97204-3654
503 227 0634

This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

September 2016

Black Butte Ranch Rural Fire Protection District/2648
Oregon Public Employees Retirement System

Dear Sir or Madam:

As part of our engagement with the Oregon Public Employees Retirement Board, we performed a system-wide actuarial valuation of the Oregon Public Employees Retirement System (“PERS” or “the System”) as of December 31, 2015. The attached report, which is an informational supplement to the system-wide report, provides you with employer-specific contribution rates that will become effective July 1, 2017. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information will be provided separately by PERS and is not included in this report.

This report reflects the System's benefit provisions in effect as of December 31, 2015. The full development of the valuation results for the OPSRP and Retiree Health Insurance Account (RHIA) programs can be found in the separate system-wide actuarial valuation report. Costs of the IAP (Individual Account Program) are not included in this or the system-wide actuarial valuation report. Further, costs of pension obligation bond payments are not included in this or the system-wide actuarial valuation report.

If you have any questions about this report, please contact Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, OPSRP general service, and OPSRP police and fire payroll,
- Information to assist you in completing GASB 45 financial reporting requirements, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- Detailed development of Tier 1/Tier 2 valuation results,
- A brief summary of methods and assumptions, and
- A brief summary of any changes in System benefit provisions.

Additional information is provided in the system-wide actuarial valuation report, which is available at www.oregon.gov/PERS/Pages/section/financial_reports/financials.aspx.



September 2016
Black Butte Ranch Rural Fire Protection District/2648

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the System's staff. This information includes, but is not limited to, System benefit provisions as defined by statute, member census data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for the System have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer a reasonable estimate of anticipated experience affecting the System.

A valuation report is only an estimate of the System's financial condition as of a single date. It can neither predict the System's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of System benefits, only the timing of System contributions. While a valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: System experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the System's funded status); and changes in System benefit provisions or applicable law. Due to the limited scope of this assignment, we did not perform an analysis of the potential range of future measurements. The Board has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in September 2015.

Some of the actuarial computations presented in this report are for purposes of determining the contribution rates effective from July 2017 to June 2019 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.



September 2016
Black Butte Ranch Rural Fire Protection District/2648

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the System. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

Additional information is provided in the system-wide actuarial valuation report.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Larrabee".

Matt Larrabee, FSA, EA, MAAA
Principal and Consulting Actuary

A handwritten signature in black ink, appearing to read "Scott Preppernau".

Scott Preppernau, FSA, EA, MAAA
Principal and Consulting Actuary



ACTUARIAL VALUATION REPORT DECEMBER 31, 2015

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

INDEPENDENT EMPLOYERS

Black Butte Ranch Rural Fire Protection District -- #2648

September 2016

CONTENTS

Executive Summary **1**

Employer Contribution Rates 1

Accounting Information 3

Principal Valuation Results 5

 ▪ Employer 5

 ▪ Tier 1/Tier 2 6

 ▪ OPSRP 7

 ▪ Retiree Healthcare 7

Side Account Information **8**

Tier 1/Tier 2 Valuation Results **10**

Assets 10

Liabilities 11

Unfunded Accrued Liability (UAL) 13

Contribution Rate Development 15

Data **20**

Brief Summary of Actuarial Methods and Assumptions **22**

Brief Summary of Changes in Plan Provisions **24**

Glossary **25**

Executive Summary

Milliman has prepared this report for Black Butte Ranch Rural Fire Protection District to:

- Provide summary December 31, 2015 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2017 through June 30, 2019,
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2015, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45. GASB 68 information will be provided separately by PERS and is not included in this report.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2015 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Black Butte Ranch Rural Fire Protection District.

Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2017 through June 30, 2019 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

Employer Rates Effective July 1, 2017 for Black Butte Ranch Rural Fire Protection District

	Payroll		
	Tier 1/Tier 2	OPSRP General Service	Police & Fire
Pension			
Normal cost rate	21.28%	8.02%	12.79%
Tier 1/Tier 2 UAL rate ¹	(6.57%)	(6.57%)	(6.57%)
OPSRP UAL rate	1.27%	1.27%	1.27%
Side account rate relief	0.00%	0.00%	0.00%
Net pension contribution rate	15.98%	2.72%	7.49%
Retiree Healthcare			
Normal cost rate	0.07%	0.00%	0.00%
UAL rate	0.43%	0.43%	0.43%
Net retiree healthcare rate	0.50%	0.43%	0.43%
Total net employer contribution rate	16.48%	3.15%	7.92%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate.

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 Biennium

The rate collar limits changes in contribution rates, but does not limit changes in rates for individual employers related to side accounts. The table below shows the possible minimum and maximum rates first effective as of July 1, 2019, which will depend on the funded status as of December 31, 2017. If the employer's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2015 is 83%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	14.71%	14.71%
Minimum 2019-2021 Rate	11.71%	8.71%
Maximum 2019-2021 Rate	17.71%	20.71%

Executive Summary

Accounting Information

Milliman is not an accounting or audit firm and cannot provide accounting advice. Milliman is not responsible for the interpretation of, or compliance with, accounting standards; citations to, and descriptions of accounting standards provided in this report are for reference purposes only. The information provided in this section is intended to assist the employer in completing its financial statements, but any accounting determination should be reviewed by your auditor.

Pension

In June 2012 the GASB issued Statement No. 68, which replaced GASB 27 and governs employer financial reporting for fiscal years beginning after June 15, 2014. The new standard replaced many of the key elements of the prior reporting requirements. Under the new rules, employers are required to record a balance sheet liability for their unfunded pension obligations. In addition, the timing and coordination of plan and employer reporting has changed under the new requirements. GASB 68 information for employers will be provided separately by PERS and is not included in this report.

Schedule of Funding Progress

Under GASB 27, the Schedule of Funding Progress for Tier 1/Tier 2 pension liabilities was reported in the Required Supplementary Information. This schedule is no longer required now that GASB 68 has replaced GASB 27. However, for additional information and the sake of historical comparison, the updated schedule is shown below for the last several valuations. For employers with side accounts, the actuarial value of assets in this Schedule includes the value of the employer's side accounts.

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (b - a)	Funded Ratio (a ÷ b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a) ÷ c)
12/31/2010	\$3,440,032	\$3,355,979	(\$84,053)	103%	\$594,334	(14%)
12/31/2011	3,324,045	3,404,058	80,013	98%	618,314	13%
12/31/2012	3,629,332	3,581,851	(47,481)	101%	702,997	(7%)
12/31/2013	4,050,159	3,942,757	(107,402)	103%	750,341	(14%)
12/31/2014	4,211,458	4,795,182	583,724	88%	776,122	75%
12/31/2015	4,197,702	5,051,937	854,235	83%	791,350	108%

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) is a cost-sharing pool under Statement No. 45 of the Governmental Accounting Standards Board (GASB 45). Consequently, each employer reports the contractually required contribution. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 was calculated as a part of this valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
	Tier 1 / Tier 2	OPSRP	
		General Service	Police & Fire
July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern employer financial reporting for retiree healthcare obligations for fiscal years beginning after June 15, 2017. In general, the changes required by GASB 75 parallel those that occurred for pension reporting when GASB 68 replaced GASB 27. Accounting information for reporting under GASB 75 will be provided separately and is not included in this report.

Executive Summary

Principal Valuation Results

A summary of principal valuation results from the current valuation and the prior valuation follows. Any changes in actuarial assumptions, methods or plan provisions between the two valuations are described later in this report. More detailed information can be found in the system-wide actuarial valuation report.

Black Butte Ranch Rural Fire Protection District

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
T1/T2 UAL	\$854,235	\$583,724
Allocated pooled OPSRP UAL	112,501	88,728
Side account	0	0
Net unfunded pension actuarial accrued liability	966,736	672,452
Combined valuation payroll	791,350	776,122
Net pension UAL as a percentage of payroll	122%	87%
Calculated side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	\$3,843	\$6,169

In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer’s combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.

Executive Summary

Principal Valuation Results (continued)

Tier 1/Tier 2

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
Normal cost	\$77,231	\$74,403
Tier 1/Tier 2 valuation payroll	362,923	351,770
Tier 1/Tier 2 pension normal cost rate	21.28%	21.15%
Tier 1/ Tier 2 Actuarial accrued liability	\$5,051,937	\$4,795,182
Actuarial asset value	4,197,702	4,211,458
Tier 1/Tier 2 Unfunded actuarial accrued liability	854,235	583,724
Tier 1/ Tier 2 Funded status	83%	88%
Combined valuation payroll	\$791,350	\$776,122
Tier 1/Tier 2 UAL as a percentage of payroll	108%	75%
Tier 1/Tier 2 UAL rate (includes Multnomah Fire District #10)	(6.57%)	(6.44%)
Tier 1/Tier 2 active members ¹	3	3
Tier 1/Tier 2 dormant members	3	3
Tier 1/Tier 2 retirees and beneficiaries	12	12

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
General service normal cost	\$342.2	\$301.3
OPSRP general service valuation payroll	4,266.9	3,720.4
General service normal cost rate	8.02%	8.10%
Police and fire normal cost	\$69.9	\$59.6
OPSRP police and fire valuation payroll	546.4	462.3
Police and fire normal cost rate	12.79%	12.90%
Actuarial accrued liability	\$3,742.5	\$3,064.1
Actuarial asset value	2,389.1	2,024.6
Unfunded actuarial accrued liability	1,353.5	1,039.5
Funded status	64%	66%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	14%	11%
UAL rate	1.27%	1.01%

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
RHIA		
Normal cost	\$3.3	\$3.5
Tier 1 / Tier 2 valuation payroll	4,730.8	4,933.1
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	\$465.6	\$468.4
Actuarial asset value	419.3	395.9
Unfunded actuarial accrued liability	46.3	72.5
Funded status	90%	85%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	0%	1%
UAL rate	0.43%	0.43%

Side Account Information

Reconciliation of Side Accounts

The following table reconciles the total side account from the beginning of the year to the end of the year. Side account transfers were calculated by PERS and made on a monthly basis. The amount of these transfers is shown in the table below.

All information in this table has been provided by PERS.

	New	Continuing	Total
1. Side account as of December 31, 2014	N/A		
2. Deposits made during 2015		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2015			
5. Side account earnings during 2015			
6. Side account as of December 31, 2015 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2015	December 31, 2014
Side account 1	\$0	\$0
Side account 2	0	0
Side account 3	0	0
Total	\$0	\$0

Development of Side Account Rate

The rate relief attributable to an employer's side account is determined by amortizing the side account balance on the valuation date over a fixed period, and expressing the result as a percentage of combined valuation payroll. For side accounts established prior to December 31, 2009, the fixed period ends December 31, 2027. For side accounts established at a later date, the fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2015	December 31, 2014
1. Total side account	\$0	\$0
2. Combined valuation payroll	791,350	776,122
3. Average Amortization factor	9.504	10.118
4. Total side account rate (-1. ÷ 2. ÷ 3.)¹	0.00%	0.00%

¹ For employers with more than one side account, the Total Side Account Rate is determined by calculating the rate on each side account separately and adding the rates together.

Tier 1/Tier 2 Valuation Results

Assets

A summary of the market value of pension assets, and reconciliation from the prior year are shown below.

Summary of Market Value of Tier 1/Tier 2 Pension Assets

	December 31, 2015	December 31, 2014
1. Member reserves	\$610,228	\$566,263
2. Employer reserves	2,577,656	2,526,453
3. Benefits in force reserve	1,009,819	1,118,743
4. Total market value of assets (1. + 2. + 3.)	\$4,197,702	\$4,211,458

The market value of member and employer reserves is provided by PERS. The benefits in force reserve provided by PERS is allocated each year among employers in proportion to their liabilities for retired members and beneficiaries.

Reconciliation of Tier 1/Tier 2 Pension Assets

	December 31, 2014 to December 31, 2015
1. Market value of assets at beginning of year	\$4,211,458
2. Regular employer contributions	2,286
3. Benefit payments and expense	(183,637)
4. Adjustments ¹	64,873
5. Interest credited	102,722
6. Total transferred from side accounts	0
7. Market value of assets at end of year (1. + 2. + 3. + 4. + 5. + 6.)	\$4,197,702

¹ Note the adjustment item above includes a reallocation of the benefits in force reserve, transfers to Multnomah Fire District #10, and other adjustments made by PERS.

Tier 1/Tier 2 Valuation Results

Liabilities

Normal Cost

The normal cost represents the value of benefits assigned to the next year of service by the actuarial cost method. If all actuarial assumptions are met, the normal cost represents the amount that would need to be contributed each year to fund plan benefits. Amounts shown below include assumed administrative expenses, which are allocated pro-rata based on normal cost.

Summary of Normal Cost by Tier/Member Classification

	December 31, 2015	December 31, 2014
Tier 1 Police & Fire	\$51,403	\$49,927
Tier 1 General Service	0	0
Tier 2 Police & Fire	25,828	24,476
Tier 2 General Service	0	0
Total	\$77,231	\$74,403

Change in Tier 1/Tier 2 Normal Cost

The following table shows the impact of the assumption, method, and plan changes on normal cost as of December 31, 2015.

	Before Changes	After Changes	Net Change
Normal Cost	\$77,231	\$77,231	\$0

Tier 1/Tier 2 Valuation Results

Liabilities

Actuarial Accrued Liability

The actuarial accrued liability represents the value of benefits allocated to service performed before the valuation date by the actuarial cost method. If all actuarial assumptions are met, the actuarial accrued liability represents the amount of assets that would need to be accumulated as of the valuation date to provide for the portion of benefits allocated to service already performed.

Summary of Actuarial Accrued Liability by Tier/Member Classification

	December 31, 2015	December 31, 2014
Active Members		
▪ Tier 1 Police & Fire	\$2,063,491	\$1,887,687
▪ Tier 1 General Service	0	0
▪ Tier 2 Police & Fire	491,813	425,779
▪ Tier 2 General Service	0	0
▪ Total Active Members	\$2,555,304	\$2,313,466
Dormant Members	316,241	311,384
Retired Members and Beneficiaries	2,180,392	2,170,332
Total Actuarial Accrued Liability	\$5,051,937	\$4,795,182

Change in Tier 1/Tier 2 Actuarial Accrued Liability

The following table shows the impact of the assumption, method, and plan changes on the actuarial accrued liability as of December 31, 2015.

	Before Changes	After Changes	Net Change
Actuarial Accrued Liability	\$5,051,937	\$5,051,937	\$0

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Summary of UAL

The UAL represents the difference between the assets accumulated and the liability attributed to prior years of service by the cost method.

	December 31, 2015	December 31, 2014
1. Actuarial accrued liability	\$5,051,937	\$4,795,182
2. Actuarial value of assets	4,197,702	4,211,458
3. Unfunded accrued liability (1. – 2.)	854,235	583,724
4. Funded percentage (2. ÷ 1.)	83%	88%
5. Combined valuation payroll	\$791,350	\$776,122
6. Unfunded accrued liability as % of combined valuation payroll (3. ÷ 5.)	108%	75%

Reconciliation of UAL Bases

Beginning with the December 31, 2013 actuarial valuation, each odd-year valuation establishes a 20-year closed-period amortization schedule for outstanding Tier 1/Tier 2 UAL amounts. Amortization schedules are calculated based on the total Tier 1/Tier 2 UAL as of that valuation date less the remaining unamortized balance of previously established Tier 1/Tier 2 UAL bases.

Amortization Base	UAL December 31, 2014	Payment	Interest	UAL December 31, 2015	Next Year's Payment
December 31, 2013	(\$107,631)	(\$8,062)	(\$7,750)	(\$107,319)	(\$8,345)
December 31, 2015	N/A	N/A	N/A	\$961,554	\$69,577
Total				\$854,235	\$61,232

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Actuarial Gain or Loss since Prior Valuation

The system-wide actuarial valuation report contains a detailed analysis of gains and losses since the last valuation. The table below shows the gain or loss for the individual employer.

1. Expected actuarial accrued liability	
a. Actuarial accrued liability at December 31, 2014	\$4,795,182
b. Normal cost at December 31, 2014 (excluding assumed expenses)	71,174
c. Benefit payments during 2015	(182,218)
d. Interest at 7.50% to December 31, 2015	355,475
e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)	5,039,613
f. Change in actuarial accrued liability due to assumption, method, and plan changes	0
g. Expected actuarial accrued liability at December 31, 2015 (e. + f.)	5,039,613
2. Actuarial accrued liability at December 31, 2015	5,051,937
3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)	(12,324)
4. Expected actuarial value of assets	
a. Actuarial value of assets at December 31, 2014	4,211,458
b. Contributions for 2015 ¹	2,286
c. Benefit payments and expenses during 2015	(183,637)
d. Interest at 7.50% to December 31, 2015	309,059
e. Expected actuarial value of assets at December 31, 2015 (a. + b. + c. + d.)	4,339,166
5. Actuarial value of assets at December 31, 2015	4,197,702
6. Gain/(loss) on actuarial value of assets (5. - 4.e.)	(141,464)
7. Total actuarial gain/(loss) (3. + 6.)	(\$153,788)

Unfunded Accrued Liability Reconciliation

A reconciliation of the Tier 1/Tier 2 UAL from December 31, 2014 is provided below.

1. UAL at December 31, 2014	\$583,724
2. Expected increase	116,723
3. Liability (gain)/loss	12,324
4. Asset (gain)/loss	141,464
5. Change due to changes in assumptions, methods, and plan provisions	0
6. UAL at December 31, 2015 (1. + 2. + 3. + 4. + 5.)	\$854,235

¹ Includes rate relief from side accounts.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Normal Cost Rate

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

Development of Tier 1/Tier 2 Normal Cost Rate

	December 31, 2015			December 31, 2014		
	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate
Tier 1 Police & Fire	\$51,403	\$241,373	21.30%	\$49,927	\$236,253	21.13%
Tier 1 General Service	0	0	0.00%	0	0	0.00%
Tier 2 Police & Fire	25,828	121,550	21.25%	24,476	115,517	21.19%
Tier 2 General Service	0	0	0.00%	0	0	0.00%
Total	\$77,231	\$362,923	21.28%	\$74,403	\$351,770	21.15%

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Development of Tier 1/Tier 2 UAL Rates

The UAL rate is determined by calculating the next year's scheduled payment to the UAL as a percentage of combined valuation payroll.

	December 31, 2015	December 31, 2014
1. Total Tier 1/Tier 2 UAL	\$854,235	\$583,724
2. Next year's Tier 1/Tier 2 UAL payment	61,232	41,964
3. Combined valuation payroll	791,350	776,122
4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)	7.74%	5.41%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	21.28%	21.15%
b. Tier 1/Tier 2 UAL rate	7.74%	5.41%
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate (a. + b. + c.)	29.17%	26.71%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Adjustments Due to Rate Collar and Minimum Rate Requirements

Employer contribution rates are generally limited to change by no more than the greater of 3 percent of payroll or 20 percent from the current contribution rate. However, if the funded percentage excluding side accounts is below 60 percent or above 140 percent the rate collar doubles in size. If the funded percentage excluding side accounts is between 60 and 70 percent or 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

The table below shows the current contribution rate for the period from July 1, 2015 through June 30, 2017, develops the maximum and minimum contribution rates effective July 1, 2017 based on the collar, and calculates the net adjustment due to the collar and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

1. Current net Tier 1/Tier 2 pension contribution rate		11.71%
2. Employer contribution rate attributable to side accounts		0.00%
3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)		11.71%
4. Size of rate collar		
a. 20% of current employer contribution rate (20% x 3.)		2.34%
b. Preliminary size of rate collar (maximum of 3% or a.)		3.00%
c. Funded percentage		83%
d. Size of rate collar (If c. < 60% or c. > 140%, 2 x b. If c. is 70%-130%, b. Otherwise, a graded rate between b. and 2 x b.)		3.00%
5. July 1, 2017 minimum employer contribution rate	(3. – 4.d. but not < 0%)	8.71%
6. July 1, 2017 maximum employer contribution rate	(3. + 4.d.)	14.71%
7. July 1, 2017 total pension rate, before adjustment		29.17%
8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)		(14.46%)
9. July 1, 2017 Tier 1/Tier 2 UAL rate, before collar		7.74%
10. July 1, 2017 Tier 1/Tier 2 UAL rate, after collar	(8. + 9.)	(6.72%)
11. July 1, 2017 Tier 1/Tier 2 pension rate, after collar		14.71%
12. Tier 1/Tier 2 retiree healthcare rate		0.50%
13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)		0.00%
14. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment		21.28%
15. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)		21.28%
16. July 1, 2017 Tier 1/Tier 2 pension rate, after minimum adjustment	(11. + 13.)	14.71%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Post-Rate Collar)

The table below summarizes the employer's pension contribution rate for Tier 1 /Tier 2 after adjustments for the rate collar and the 6 percent of payroll minimum employer contribution rate.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	21.28%	21.15%
b. Tier 1/Tier 2 UAL rate	(6.72%)	(6.59%)
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate <i>(a. + b. + c., minimum of 5.50%)</i>	14.71%	14.71%

Data

Demographic Information

Employer Valuation Payroll

	General Service	Police & Fire	Total
Tier 1	\$0	\$241,373	\$241,373
Tier 2	0	121,550	121,550
Tier 1/Tier 2 valuation payroll	0	362,923	362,923
OPSRP valuation payroll	54,769	373,658	428,427
Combined valuation payroll	\$54,769	\$736,581	\$791,350

Employer Member Census

	December 31							
	2015				2014			
	Tier 1	Tier 2	OPSRP	Total	Tier 1	Tier 2	OPSRP	Total
Active Members ¹								
General Service	0	0	1	1	0	0	1	1
Police & Fire	2	1	4	7	2	1	4	7
Total	2	1	5	8	2	1	5	8
Active Members with previous service segments with the employer								
General Service	0	0	N/A	0	0	0	N/A	0
Police & Fire	4	2	N/A	6	4	2	N/A	6
Total	4	2	N/A	6	4	2	N/A	6
Dormant Members								
General Service	0	0	0	0	0	0	0	0
Police & Fire	2	1	0	3	2	1	0	3
Total	2	1	0	3	2	1	0	3
Retired Members and Beneficiaries								
General Service	1	0	0	1	1	0	0	1
Police & Fire	11	0	0	11	11	0	0	11
Total	12	0	0	12	12	0	0	12
Grand Total Number of Members	20	4	5	29	20	4	5	29

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Data

Demographic Information (continued)

Employer Tier 1/Tier 2 Active Members as of December 31, 2015

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
<20										
20-24										
25-29										
30-34										
35-39										
40-44										
45-49				1						1
50-54			1			1				2
55-59										
60-64										
65-69										
70-74										
75+										
Total	0	0	1	1	0	1	0	0	0	3

Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2015

Dormant Members			Retired Members and Beneficiaries		
Age	Count	Average Deferred Monthly Benefit	Age	Count	Average Monthly Benefit
<20			<45		
20-24			45-49		
25-29			50-54		
30-34			55-59	2	1,276
35-39			60-64	2	638
40-44	2	1,325	65-69	2	1,562
45-49			70-74	3	1,364
50-54			75-79	2	857
55-59	1	636	80-84	1	93
60-64			85-89		
65-69			90-94		
70-74			95-99		
75+			100+		
Total	3	1,095	Total	12	1,071

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2015 valuation can be found in the system-wide actuarial valuation report.

Actuarial Methods and Valuation Procedures

A brief summary of the methods used in this valuation is shown below:

<i>Actuarial cost method</i>	Entry Age Normal.
<i>Amortization Method</i>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. Gains and losses between subsequent odd-year valuations will be amortized as a level percentage of projected combined valuation payroll over a closed 20 year period.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.</p>

Economic Assumptions

A brief summary of the key economic assumptions used in this valuation is shown below:

<i>Net investment return</i>	7.50% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.50% compounded annually on members' regular account balances.</p> <p>7.50% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 6.3% in 2016 to 4.4% in 2094.
<i>Administrative Expenses</i>	<p>\$5.5 million added to OPSRP normal cost.</p> <p>\$33.0 million added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2014 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

There were no changes in actuarial methods and allocation procedures since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA actuarial methods and allocation procedures is provided as part of the system-wide valuation report.

Changes in Assumptions

There were no changes in assumptions since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA assumptions is provided as part of the system-wide valuation report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Glossary

Actuarial Accrued Liability

The portion of the present value of prospective benefits allocated to service and compensation before the valuation date in accordance with the actuarial cost method.

Actuarial Asset Value

The value of assets used in calculating the required contributions. The actuarial asset value may be equal to the fair market value of assets, or it may spread the recognition of certain investment gains or losses over a period of years in accordance with an asset valuation method.

Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disablement and retirement; rates of investment earnings and other relevant items.

Actuarial Cost Method

Sometimes called "funding method," a particular technique used by actuaries to establish the amount and incidence of the annual actuarial cost of pension plan benefits, or normal cost, and the related unfunded actuarial accrued liability. Ordinarily, the annual contribution to the plan comprises the normal cost and an amount for amortization of the unfunded actuarial accrued liability.

Actuarial Gain or (Loss)

A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions, during the period between two actuarial valuation dates, as determined in accordance with a particular actuarial cost method.

Combined Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for both Tier 1/Tier 2 and OPSRP active members. This payroll is used to calculate UAL rates.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

Employer Contribution Rate

Consists of the normal cost rate and the UAL rates, plus adjustments for other items such as side account rate offsets.

Funded Status

The actuarial value of assets expressed as a percentage of the actuarial accrued liability.

Normal Cost

The annual cost allocated to the current year, under the actuarial cost method in use. The normal cost divided by the applicable payroll is the normal cost rate.

OPSRP Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for OPSRP active members. This payroll is used to calculate OPSRP normal cost rates.

Glossary

Pre-SLGRP Liability

The sum of Pre-SLGRP Pooled Liabilities and Transition Liabilities.

Pre-SLGRP Pooled Liability

The difference between the total UAL and the UAL attributable to the SLGRP for a pool of employers that joined the SLGRP. There are currently two pre-SLGRP pools. One was created for State Agencies and Community Colleges when the SLGRP was formed. The other one was created when the Local Government Rate Pool joined the SLGRP.

Present Value

Sometimes called “actuarial present value,” the estimated cost (as of the valuation date) of a series of future payments. The present value is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Rate Collar

A methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution rate and funded status.

Required Supplementary Information (RSI)

Schedules, statistical data, and other information that are an essential part of financial reporting and should be presented with, but are not part of, the basic financial statements of a governmental entity.

Statement No. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions.

Statement No. 68 of the Governmental Accounting Standards Board (GASB 68)

The accounting standard governing a state or local governmental employer’s accounting for pensions for fiscal years beginning after June 15, 2014.

Statement No. 75 of the Governmental Accounting Standards Board (GASB 75)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

The difference between the total UAL and the UAL attributable to the SLGRP for an individual employer that joined the SLGRP or the Local Government Rate Pool.

Unfunded Accrued Liability (UAL)

The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. The UAL is divided by combined valuation payroll and an amortization factor to determine an initial pre-collar UAL rate. The final UAL rate can be adjusted by the rate collar.



Milliman
111 SW Fifth Avenue, Suite 3700
Portland, OR 97204-3654
503 227 0634

This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

September 2016

Boardman Rural Fire Protection District/2833
Oregon Public Employees Retirement System

Dear Sir or Madam:

As part of our engagement with the Oregon Public Employees Retirement Board, we performed a system-wide actuarial valuation of the Oregon Public Employees Retirement System (“PERS” or “the System”) as of December 31, 2015. The attached report, which is an informational supplement to the system-wide report, provides you with employer-specific contribution rates that will become effective July 1, 2017. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information will be provided separately by PERS and is not included in this report.

This report reflects the System's benefit provisions in effect as of December 31, 2015. The full development of the valuation results for the OPSRP and Retiree Health Insurance Account (RHIA) programs can be found in the separate system-wide actuarial valuation report. Costs of the IAP (Individual Account Program) are not included in this or the system-wide actuarial valuation report. Further, costs of pension obligation bond payments are not included in this or the system-wide actuarial valuation report.

If you have any questions about this report, please contact Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, OPSRP general service, and OPSRP police and fire payroll,
- Information to assist you in completing GASB 45 financial reporting requirements, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- Detailed development of Tier 1/Tier 2 valuation results,
- A brief summary of methods and assumptions, and
- A brief summary of any changes in System benefit provisions.

Additional information is provided in the system-wide actuarial valuation report, which is available at www.oregon.gov/PERS/Pages/section/financial_reports/financials.aspx.



September 2016
Boardman Rural Fire Protection District/2833

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the System's staff. This information includes, but is not limited to, System benefit provisions as defined by statute, member census data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for the System have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer a reasonable estimate of anticipated experience affecting the System.

A valuation report is only an estimate of the System's financial condition as of a single date. It can neither predict the System's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of System benefits, only the timing of System contributions. While a valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: System experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the System's funded status); and changes in System benefit provisions or applicable law. Due to the limited scope of this assignment, we did not perform an analysis of the potential range of future measurements. The Board has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in September 2015.

Some of the actuarial computations presented in this report are for purposes of determining the contribution rates effective from July 2017 to June 2019 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.



September 2016
Boardman Rural Fire Protection District/2833

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the System. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

Additional information is provided in the system-wide actuarial valuation report.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Larrabee".

Matt Larrabee, FSA, EA, MAAA
Principal and Consulting Actuary

A handwritten signature in black ink, appearing to read "Scott Preppernau".

Scott Preppernau, FSA, EA, MAAA
Principal and Consulting Actuary



ACTUARIAL VALUATION REPORT DECEMBER 31, 2015

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

INDEPENDENT EMPLOYERS

Boardman Rural Fire Protection District -- #2833

September 2016

CONTENTS

Executive Summary **1**

Employer Contribution Rates 1

Accounting Information 3

Principal Valuation Results 5

 ▪ Employer 5

 ▪ Tier 1/Tier 2 6

 ▪ OPSRP 7

 ▪ Retiree Healthcare 7

Side Account Information **8**

Tier 1/Tier 2 Valuation Results **10**

Assets 10

Liabilities 11

Unfunded Accrued Liability (UAL) 13

Contribution Rate Development 15

Data **20**

Brief Summary of Actuarial Methods and Assumptions **22**

Brief Summary of Changes in Plan Provisions **24**

Glossary **25**

Executive Summary

Milliman has prepared this report for Boardman Rural Fire Protection District to:

- Provide summary December 31, 2015 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2017 through June 30, 2019,
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2015, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45. GASB 68 information will be provided separately by PERS and is not included in this report.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2015 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Boardman Rural Fire Protection District.

Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2017 through June 30, 2019 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

Employer Rates Effective July 1, 2017 for Boardman Rural Fire Protection District

	Payroll		
	Tier 1/Tier 2	OPSRP General Service	OPSRP Police & Fire
Pension			
Normal cost rate	20.91%	8.02%	12.79%
Tier 1/Tier 2 UAL rate ¹	(0.38%)	(0.38%)	(0.38%)
OPSRP UAL rate	1.27%	1.27%	1.27%
Side account rate relief	0.00%	0.00%	0.00%
Net pension contribution rate	21.80%	8.91%	13.68%
Retiree Healthcare			
Normal cost rate	0.07%	0.00%	0.00%
UAL rate	0.43%	0.43%	0.43%
Net retiree healthcare rate	0.50%	0.43%	0.43%
Total net employer contribution rate	22.30%	9.34%	14.11%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate.

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 Biennium

The rate collar limits changes in contribution rates, but does not limit changes in rates for individual employers related to side accounts. The table below shows the possible minimum and maximum rates first effective as of July 1, 2019, which will depend on the funded status as of December 31, 2017. If the employer's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2015 is 89%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	20.53%	20.53%
Minimum 2019-2021 Rate	16.42%	12.31%
Maximum 2019-2021 Rate	24.64%	28.75%

Executive Summary

Accounting Information

Milliman is not an accounting or audit firm and cannot provide accounting advice. Milliman is not responsible for the interpretation of, or compliance with, accounting standards; citations to, and descriptions of accounting standards provided in this report are for reference purposes only. The information provided in this section is intended to assist the employer in completing its financial statements, but any accounting determination should be reviewed by your auditor.

Pension

In June 2012 the GASB issued Statement No. 68, which replaced GASB 27 and governs employer financial reporting for fiscal years beginning after June 15, 2014. The new standard replaced many of the key elements of the prior reporting requirements. Under the new rules, employers are required to record a balance sheet liability for their unfunded pension obligations. In addition, the timing and coordination of plan and employer reporting has changed under the new requirements. GASB 68 information for employers will be provided separately by PERS and is not included in this report.

Schedule of Funding Progress

Under GASB 27, the Schedule of Funding Progress for Tier 1/Tier 2 pension liabilities was reported in the Required Supplementary Information. This schedule is no longer required now that GASB 68 has replaced GASB 27. However, for additional information and the sake of historical comparison, the updated schedule is shown below for the last several valuations. For employers with side accounts, the actuarial value of assets in this Schedule includes the value of the employer's side accounts.

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (b - a)	Funded Ratio (a ÷ b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a) ÷ c)
12/31/2010	\$219,141	\$218,028	(\$1,113)	101%	\$342,071	0%
12/31/2011	232,340	251,708	19,368	92%	318,829	6%
12/31/2012	279,659	285,777	6,118	98%	336,480	2%
12/31/2013	333,886	317,127	(16,759)	105%	386,969	(4%)
12/31/2014	364,641	388,362	23,721	94%	404,148	6%
12/31/2015	382,453	430,058	47,605	89%	446,761	11%

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) is a cost-sharing pool under Statement No. 45 of the Governmental Accounting Standards Board (GASB 45). Consequently, each employer reports the contractually required contribution. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 was calculated as a part of this valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
	Tier 1 / Tier 2	OPSRP	
		General Service	Police & Fire
July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern employer financial reporting for retiree healthcare obligations for fiscal years beginning after June 15, 2017. In general, the changes required by GASB 75 parallel those that occurred for pension reporting when GASB 68 replaced GASB 27. Accounting information for reporting under GASB 75 will be provided separately and is not included in this report.

Executive Summary

Principal Valuation Results

A summary of principal valuation results from the current valuation and the prior valuation follows. Any changes in actuarial assumptions, methods or plan provisions between the two valuations are described later in this report. More detailed information can be found in the system-wide actuarial valuation report.

Boardman Rural Fire Protection District

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
T1/T2 UAL	\$47,605	\$23,721
Allocated pooled OPSRP UAL	63,513	46,203
Side account	0	0
Net unfunded pension actuarial accrued liability	111,118	69,924
Combined valuation payroll	446,761	404,148
Net pension UAL as a percentage of payroll	25%	17%
Calculated side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	\$2,169	\$3,212

In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer's combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.

Executive Summary

Principal Valuation Results (continued)

Tier 1/Tier 2

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
Normal cost	\$18,826	\$18,025
Tier 1/Tier 2 valuation payroll	90,036	86,589
Tier 1/Tier 2 pension normal cost rate	20.91%	20.82%
Tier 1/ Tier 2 Actuarial accrued liability	\$430,058	\$388,362
Actuarial asset value	382,453	364,641
Tier 1/Tier 2 Unfunded actuarial accrued liability	47,605	23,721
Tier 1/ Tier 2 Funded status	89%	94%
Combined valuation payroll	\$446,761	\$404,148
Tier 1/Tier 2 UAL as a percentage of payroll	11%	6%
Tier 1/Tier 2 UAL rate (includes Multnomah Fire District #10)	(0.38%)	(0.29%)
Tier 1/Tier 2 active members ¹	1	1
Tier 1/Tier 2 dormant members	0	0
Tier 1/Tier 2 retirees and beneficiaries	0	0

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
General service normal cost	\$342.2	\$301.3
OPSRP general service valuation payroll	4,266.9	3,720.4
General service normal cost rate	8.02%	8.10%
Police and fire normal cost	\$69.9	\$59.6
OPSRP police and fire valuation payroll	546.4	462.3
Police and fire normal cost rate	12.79%	12.90%
Actuarial accrued liability	\$3,742.5	\$3,064.1
Actuarial asset value	2,389.1	2,024.6
Unfunded actuarial accrued liability	1,353.5	1,039.5
Funded status	64%	66%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	14%	11%
UAL rate	1.27%	1.01%

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
RHIA		
Normal cost	\$3.3	\$3.5
Tier 1 / Tier 2 valuation payroll	4,730.8	4,933.1
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	\$465.6	\$468.4
Actuarial asset value	419.3	395.9
Unfunded actuarial accrued liability	46.3	72.5
Funded status	90%	85%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	0%	1%
UAL rate	0.43%	0.43%

Side Account Information

Reconciliation of Side Accounts

The following table reconciles the total side account from the beginning of the year to the end of the year. Side account transfers were calculated by PERS and made on a monthly basis. The amount of these transfers is shown in the table below.

All information in this table has been provided by PERS.

	New	Continuing	Total
1. Side account as of December 31, 2014	N/A		
2. Deposits made during 2015		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2015			
5. Side account earnings during 2015			
6. Side account as of December 31, 2015 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2015	December 31, 2014
Side account 1	\$0	\$0
Side account 2	0	0
Side account 3	0	0
Total	\$0	\$0

Development of Side Account Rate

The rate relief attributable to an employer's side account is determined by amortizing the side account balance on the valuation date over a fixed period, and expressing the result as a percentage of combined valuation payroll. For side accounts established prior to December 31, 2009, the fixed period ends December 31, 2027. For side accounts established at a later date, the fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2015	December 31, 2014
1. Total side account	\$0	\$0
2. Combined valuation payroll	446,761	404,148
3. Average Amortization factor	9.504	10.118
4. Total side account rate (-1. ÷ 2. ÷ 3.)¹	0.00%	0.00%

¹ For employers with more than one side account, the Total Side Account Rate is determined by calculating the rate on each side account separately and adding the rates together.

Tier 1/Tier 2 Valuation Results

Assets

A summary of the market value of pension assets, and reconciliation from the prior year are shown below.

Summary of Market Value of Tier 1/Tier 2 Pension Assets

	December 31, 2015	December 31, 2014
1. Member reserves	\$47,518	\$46,172
2. Employer reserves	334,935	318,469
3. Benefits in force reserve	0	0
4. Total market value of assets (1. + 2. + 3.)	\$382,453	\$364,641

The market value of member and employer reserves is provided by PERS. The benefits in force reserve provided by PERS is allocated each year among employers in proportion to their liabilities for retired members and beneficiaries.

Reconciliation of Tier 1/Tier 2 Pension Assets

	December 31, 2014 to December 31, 2015
1. Market value of assets at beginning of year	\$364,641
2. Regular employer contributions	10,541
3. Benefit payments and expense	0
4. Adjustments ¹	268
5. Interest credited	7,004
6. Total transferred from side accounts	0
7. Market value of assets at end of year (1. + 2. + 3. + 4. + 5. + 6.)	\$382,453

¹ Note the adjustment item above includes a reallocation of the benefits in force reserve, transfers to Multnomah Fire District #10, and other adjustments made by PERS.

Tier 1/Tier 2 Valuation Results

Liabilities

Normal Cost

The normal cost represents the value of benefits assigned to the next year of service by the actuarial cost method. If all actuarial assumptions are met, the normal cost represents the amount that would need to be contributed each year to fund plan benefits. Amounts shown below include assumed administrative expenses, which are allocated pro-rata based on normal cost.

Summary of Normal Cost by Tier/Member Classification

	December 31, 2015	December 31, 2014
Tier 1 Police & Fire	\$0	\$0
Tier 1 General Service	0	0
Tier 2 Police & Fire	18,826	18,025
Tier 2 General Service	0	0
Total	\$18,826	\$18,025

Change in Tier 1/Tier 2 Normal Cost

The following table shows the impact of the assumption, method, and plan changes on normal cost as of December 31, 2015.

	Before Changes	After Changes	Net Change
Normal Cost	\$18,826	\$18,826	\$0

Tier 1/Tier 2 Valuation Results

Liabilities

Actuarial Accrued Liability

The actuarial accrued liability represents the value of benefits allocated to service performed before the valuation date by the actuarial cost method. If all actuarial assumptions are met, the actuarial accrued liability represents the amount of assets that would need to be accumulated as of the valuation date to provide for the portion of benefits allocated to service already performed.

Summary of Actuarial Accrued Liability by Tier/Member Classification

	December 31, 2015	December 31, 2014
Active Members		
▪ Tier 1 Police & Fire	\$0	\$0
▪ Tier 1 General Service	0	0
▪ Tier 2 Police & Fire	430,058	388,362
▪ Tier 2 General Service	0	0
▪ Total Active Members	\$430,058	\$388,362
Dormant Members	0	0
Retired Members and Beneficiaries	0	0
Total Actuarial Accrued Liability	\$430,058	\$388,362

Change in Tier 1/Tier 2 Actuarial Accrued Liability

The following table shows the impact of the assumption, method, and plan changes on the actuarial accrued liability as of December 31, 2015.

	Before Changes	After Changes	Net Change
Actuarial Accrued Liability	\$430,058	\$430,058	\$0

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Summary of UAL

The UAL represents the difference between the assets accumulated and the liability attributed to prior years of service by the cost method.

	December 31, 2015	December 31, 2014
1. Actuarial accrued liability	\$430,058	\$388,362
2. Actuarial value of assets	382,453	364,641
3. Unfunded accrued liability (1. – 2.)	47,605	23,721
4. Funded percentage (2. ÷ 1.)	89%	94%
5. Combined valuation payroll	\$446,761	\$404,148
6. Unfunded accrued liability as % of combined valuation payroll (3. ÷ 5.)	11%	6%

Reconciliation of UAL Bases

Beginning with the December 31, 2013 actuarial valuation, each odd-year valuation establishes a 20-year closed-period amortization schedule for outstanding Tier 1/Tier 2 UAL amounts. Amortization schedules are calculated based on the total Tier 1/Tier 2 UAL as of that valuation date less the remaining unamortized balance of previously established Tier 1/Tier 2 UAL bases.

Amortization Base	UAL December 31, 2014	Payment	Interest	UAL December 31, 2015	Next Year's Payment
December 31, 2013	(\$16,795)	(\$1,258)	(\$1,209)	(\$16,746)	(\$1,302)
December 31, 2015	N/A	N/A	N/A	\$64,351	\$4,656
Total				\$47,605	\$3,354

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Actuarial Gain or Loss since Prior Valuation

The system-wide actuarial valuation report contains a detailed analysis of gains and losses since the last valuation. The table below shows the gain or loss for the individual employer.

1. Expected actuarial accrued liability	
a. Actuarial accrued liability at December 31, 2014	\$388,362
b. Normal cost at December 31, 2014 (excluding assumed expenses)	17,243
c. Benefit payments during 2015	0
d. Interest at 7.50% to December 31, 2015	29,774
e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)	435,379
f. Change in actuarial accrued liability due to assumption, method, and plan changes	0
g. Expected actuarial accrued liability at December 31, 2015 (e. + f.)	435,379
2. Actuarial accrued liability at December 31, 2015	430,058
3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)	5,321
4. Expected actuarial value of assets	
a. Actuarial value of assets at December 31, 2014	364,641
b. Contributions for 2015 ¹	10,541
c. Benefit payments and expenses during 2015	0
d. Interest at 7.50% to December 31, 2015	27,743
e. Expected actuarial value of assets at December 31, 2015 (a. + b. + c. + d.)	402,925
5. Actuarial value of assets at December 31, 2015	382,453
6. Gain/(loss) on actuarial value of assets (5. - 4.e.)	(20,471)
7. Total actuarial gain/(loss) (3. + 6.)	(\$15,150)

Unfunded Accrued Liability Reconciliation

A reconciliation of the Tier 1/Tier 2 UAL from December 31, 2014 is provided below.

1. UAL at December 31, 2014	\$23,721
2. Expected increase	8,734
3. Liability (gain)/loss	(5,321)
4. Asset (gain)/loss	20,471
5. Change due to changes in assumptions, methods, and plan provisions	0
6. UAL at December 31, 2015 (1. + 2. + 3. + 4. + 5.)	\$47,605

¹ Includes rate relief from side accounts.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Normal Cost Rate

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

Development of Tier 1/Tier 2 Normal Cost Rate

	December 31, 2015			December 31, 2014		
	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate
Tier 1 Police & Fire	\$0	\$0	0.00%	\$0	\$0	0.00%
Tier 1 General Service	0	0	0.00%	0	0	0.00%
Tier 2 Police & Fire	18,826	90,036	20.91%	18,025	86,589	20.82%
Tier 2 General Service	0	0	0.00%	0	0	0.00%
Total	\$18,826	\$90,036	20.91%	\$18,025	\$86,589	20.82%

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Development of Tier 1/Tier 2 UAL Rates

The UAL rate is determined by calculating the next year's scheduled payment to the UAL as a percentage of combined valuation payroll.

	December 31, 2015	December 31, 2014
1. Total Tier 1/Tier 2 UAL	\$47,605	\$23,721
2. Next year's Tier 1/Tier 2 UAL payment	3,354	1,674
3. Combined valuation payroll	446,761	404,148
4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)	0.75%	0.41%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	20.91%	20.82%
b. Tier 1/Tier 2 UAL rate	0.75%	0.41%
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate (a. + b. + c.)	21.81%	21.38%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Adjustments Due to Rate Collar and Minimum Rate Requirements

Employer contribution rates are generally limited to change by no more than the greater of 3 percent of payroll or 20 percent from the current contribution rate. However, if the funded percentage excluding side accounts is below 60 percent or above 140 percent the rate collar doubles in size. If the funded percentage excluding side accounts is between 60 and 70 percent or 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

The table below shows the current contribution rate for the period from July 1, 2015 through June 30, 2017, develops the maximum and minimum contribution rates effective July 1, 2017 based on the collar, and calculates the net adjustment due to the collar and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

1. Current net Tier 1/Tier 2 pension contribution rate		17.11%
2. Employer contribution rate attributable to side accounts		0.00%
3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)		17.11%
4. Size of rate collar		
a. 20% of current employer contribution rate (20% x 3.)		3.42%
b. Preliminary size of rate collar (maximum of 3% or a.)		3.42%
c. Funded percentage		89%
d. Size of rate collar (If c. < 60% or c. > 140%, 2 x b. If c. is 70%-130%, b. Otherwise, a graded rate between b. and 2 x b.)		3.42%
5. July 1, 2017 minimum employer contribution rate	(3. – 4.d. but not < 0%)	13.69%
6. July 1, 2017 maximum employer contribution rate	(3. + 4.d.)	20.53%
7. July 1, 2017 total pension rate, before adjustment		21.81%
8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)		(1.28%)
9. July 1, 2017 Tier 1/Tier 2 UAL rate, before collar		0.75%
10. July 1, 2017 Tier 1/Tier 2 UAL rate, after collar	(8. + 9.)	(0.53%)
11. July 1, 2017 Tier 1/Tier 2 pension rate, after collar		20.53%
12. Tier 1/Tier 2 retiree healthcare rate		0.50%
13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)		0.00%
14. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment		20.91%
15. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)		20.91%
16. July 1, 2017 Tier 1/Tier 2 pension rate, after minimum adjustment	(11. + 13.)	20.53%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Post-Rate Collar)

The table below summarizes the employer's pension contribution rate for Tier 1 /Tier 2 after adjustments for the rate collar and the 6 percent of payroll minimum employer contribution rate.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	20.91%	20.82%
b. Tier 1/Tier 2 UAL rate	(0.53%)	(0.44%)
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate <i>(a. + b. + c., minimum of 5.50%)</i>	20.53%	20.53%

Data

Demographic Information

Employer Valuation Payroll

	General Service	Police & Fire	Total
Tier 1	\$0	\$0	\$0
Tier 2	0	90,036	90,036
Tier 1/Tier 2 valuation payroll	0	90,036	90,036
OPSRP valuation payroll	40,783	315,942	356,725
Combined valuation payroll	\$40,783	\$405,978	\$446,761

Employer Member Census

	December 31							
	2015				2014			
	Tier 1	Tier 2	OPSRP	Total	Tier 1	Tier 2	OPSRP	Total
Active Members ¹								
General Service	0	0	1	1	0	0	1	1
Police & Fire	0	1	6	7	0	1	6	7
Total	0	1	7	8	0	1	7	8
Active Members with previous service segments with the employer								
General Service	0	0	N/A	0	0	0	N/A	0
Police & Fire	0	1	N/A	1	0	1	N/A	1
Total	0	1	N/A	1	0	1	N/A	1
Dormant Members								
General Service	0	0	0	0	0	0	0	0
Police & Fire	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0
Retired Members and Beneficiaries								
General Service	0	0	0	0	0	0	0	0
Police & Fire	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0
Grand Total Number of Members	0	2	7	9	0	2	7	9

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Data

Demographic Information (continued)

Employer Tier 1/Tier 2 Active Members as of December 31, 2015

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
<20										
20-24										
25-29										
30-34										
35-39										
40-44										
45-49										
50-54										
55-59				1						1
60-64										
65-69										
70-74										
75+										
Total	0	0	0	1	0	0	0	0	0	1

Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2015

Dormant Members			Retired Members and Beneficiaries		
Age	Count	Average Deferred Monthly Benefit	Age	Count	Average Monthly Benefit
<20			<45		
20-24			45-49		
25-29			50-54		
30-34			55-59		
35-39			60-64		
40-44			65-69		
45-49			70-74		
50-54			75-79		
55-59			80-84		
60-64			85-89		
65-69			90-94		
70-74			95-99		
75+			100+		
Total			Total		

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2015 valuation can be found in the system-wide actuarial valuation report.

Actuarial Methods and Valuation Procedures

A brief summary of the methods used in this valuation is shown below:

<i>Actuarial cost method</i>	Entry Age Normal.
<i>Amortization Method</i>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. Gains and losses between subsequent odd-year valuations will be amortized as a level percentage of projected combined valuation payroll over a closed 20 year period.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.</p>

Economic Assumptions

A brief summary of the key economic assumptions used in this valuation is shown below:

<i>Net investment return</i>	7.50% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.50% compounded annually on members' regular account balances.</p> <p>7.50% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 6.3% in 2016 to 4.4% in 2094.
<i>Administrative Expenses</i>	<p>\$5.5 million added to OPSRP normal cost.</p> <p>\$33.0 million added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2014 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

There were no changes in actuarial methods and allocation procedures since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA actuarial methods and allocation procedures is provided as part of the system-wide valuation report.

Changes in Assumptions

There were no changes in assumptions since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA assumptions is provided as part of the system-wide valuation report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Glossary

Actuarial Accrued Liability

The portion of the present value of prospective benefits allocated to service and compensation before the valuation date in accordance with the actuarial cost method.

Actuarial Asset Value

The value of assets used in calculating the required contributions. The actuarial asset value may be equal to the fair market value of assets, or it may spread the recognition of certain investment gains or losses over a period of years in accordance with an asset valuation method.

Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disablement and retirement; rates of investment earnings and other relevant items.

Actuarial Cost Method

Sometimes called “funding method,” a particular technique used by actuaries to establish the amount and incidence of the annual actuarial cost of pension plan benefits, or normal cost, and the related unfunded actuarial accrued liability. Ordinarily, the annual contribution to the plan comprises the normal cost and an amount for amortization of the unfunded actuarial accrued liability.

Actuarial Gain or (Loss)

A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions, during the period between two actuarial valuation dates, as determined in accordance with a particular actuarial cost method.

Combined Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for both Tier 1/Tier 2 and OPSRP active members. This payroll is used to calculate UAL rates.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

Employer Contribution Rate

Consists of the normal cost rate and the UAL rates, plus adjustments for other items such as side account rate offsets.

Funded Status

The actuarial value of assets expressed as a percentage of the actuarial accrued liability.

Normal Cost

The annual cost allocated to the current year, under the actuarial cost method in use. The normal cost divided by the applicable payroll is the normal cost rate.

OPSRP Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for OPSRP active members. This payroll is used to calculate OPSRP normal cost rates.

Glossary

Pre-SLGRP Liability

The sum of Pre-SLGRP Pooled Liabilities and Transition Liabilities.

Pre-SLGRP Pooled Liability

The difference between the total UAL and the UAL attributable to the SLGRP for a pool of employers that joined the SLGRP. There are currently two pre-SLGRP pools. One was created for State Agencies and Community Colleges when the SLGRP was formed. The other one was created when the Local Government Rate Pool joined the SLGRP.

Present Value

Sometimes called “actuarial present value,” the estimated cost (as of the valuation date) of a series of future payments. The present value is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Rate Collar

A methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution rate and funded status.

Required Supplementary Information (RSI)

Schedules, statistical data, and other information that are an essential part of financial reporting and should be presented with, but are not part of, the basic financial statements of a governmental entity.

Statement No. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions.

Statement No. 68 of the Governmental Accounting Standards Board (GASB 68)

The accounting standard governing a state or local governmental employer’s accounting for pensions for fiscal years beginning after June 15, 2014.

Statement No. 75 of the Governmental Accounting Standards Board (GASB 75)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

The difference between the total UAL and the UAL attributable to the SLGRP for an individual employer that joined the SLGRP or the Local Government Rate Pool.

Unfunded Accrued Liability (UAL)

The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. The UAL is divided by combined valuation payroll and an amortization factor to determine an initial pre-collar UAL rate. The final UAL rate can be adjusted by the rate collar.



Milliman
111 SW Fifth Avenue, Suite 3700
Portland, OR 97204-3654
503 227 0634

This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

September 2016

Brownsville Rural Fire Protection District/2779
Oregon Public Employees Retirement System

Dear Sir or Madam:

As part of our engagement with the Oregon Public Employees Retirement Board, we performed a system-wide actuarial valuation of the Oregon Public Employees Retirement System (“PERS” or “the System”) as of December 31, 2015. The attached report, which is an informational supplement to the system-wide report, provides you with employer-specific contribution rates that will become effective July 1, 2017. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information will be provided separately by PERS and is not included in this report.

This report reflects the System's benefit provisions in effect as of December 31, 2015. The full development of the valuation results for the OPSRP and Retiree Health Insurance Account (RHIA) programs can be found in the separate system-wide actuarial valuation report. Costs of the IAP (Individual Account Program) are not included in this or the system-wide actuarial valuation report. Further, costs of pension obligation bond payments are not included in this or the system-wide actuarial valuation report.

If you have any questions about this report, please contact Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, OPSRP general service, and OPSRP police and fire payroll,
- Information to assist you in completing GASB 45 financial reporting requirements, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- Detailed development of Tier 1/Tier 2 valuation results,
- A brief summary of methods and assumptions, and
- A brief summary of any changes in System benefit provisions.

Additional information is provided in the system-wide actuarial valuation report, which is available at www.oregon.gov/PERS/Pages/section/financial_reports/financials.aspx.



September 2016
Brownsville Rural Fire Protection District/2779

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the System's staff. This information includes, but is not limited to, System benefit provisions as defined by statute, member census data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for the System have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer a reasonable estimate of anticipated experience affecting the System.

A valuation report is only an estimate of the System's financial condition as of a single date. It can neither predict the System's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of System benefits, only the timing of System contributions. While a valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: System experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the System's funded status); and changes in System benefit provisions or applicable law. Due to the limited scope of this assignment, we did not perform an analysis of the potential range of future measurements. The Board has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in September 2015.

Some of the actuarial computations presented in this report are for purposes of determining the contribution rates effective from July 2017 to June 2019 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.



September 2016
Brownsville Rural Fire Protection District/2779

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the System. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

Additional information is provided in the system-wide actuarial valuation report.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Larrabee".

Matt Larrabee, FSA, EA, MAAA
Principal and Consulting Actuary

A handwritten signature in black ink, appearing to read "Scott Preppernau".

Scott Preppernau, FSA, EA, MAAA
Principal and Consulting Actuary



ACTUARIAL VALUATION REPORT DECEMBER 31, 2015

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

INDEPENDENT EMPLOYERS

Brownsville Rural Fire Protection District -- #2779

September 2016

CONTENTS

Executive Summary **1**

Employer Contribution Rates 1

Accounting Information 3

Principal Valuation Results 5

 ▪ Employer 5

 ▪ Tier 1/Tier 2 6

 ▪ OPSRP 7

 ▪ Retiree Healthcare 7

Side Account Information **8**

Tier 1/Tier 2 Valuation Results **10**

Assets 10

Liabilities 11

Unfunded Accrued Liability (UAL) 13

Contribution Rate Development 15

Data **20**

Brief Summary of Actuarial Methods and Assumptions **22**

Brief Summary of Changes in Plan Provisions **24**

Glossary **25**

Executive Summary

Milliman has prepared this report for Brownsville Rural Fire Protection District to:

- Provide summary December 31, 2015 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2017 through June 30, 2019,
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2015, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45. GASB 68 information will be provided separately by PERS and is not included in this report.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2015 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Brownsville Rural Fire Protection District.

Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2017 through June 30, 2019 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

Employer Rates Effective July 1, 2017 for Brownsville Rural Fire Protection District

	Payroll		
	Tier 1/Tier 2	OPSRP General Service	Police & Fire
Pension			
Normal cost rate	19.54%	8.02%	12.79%
Tier 1/Tier 2 UAL rate ¹	(4.94%)	(4.94%)	(4.94%)
OPSRP UAL rate	1.27%	1.27%	1.27%
Side account rate relief	0.00%	0.00%	0.00%
Net pension contribution rate	15.87%	4.35%	9.12%
Retiree Healthcare			
Normal cost rate	0.07%	0.00%	0.00%
UAL rate	0.43%	0.43%	0.43%
Net retiree healthcare rate	0.50%	0.43%	0.43%
Total net employer contribution rate	16.37%	4.78%	9.55%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate.

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 Biennium

The rate collar limits changes in contribution rates, but does not limit changes in rates for individual employers related to side accounts. The table below shows the possible minimum and maximum rates first effective as of July 1, 2019, which will depend on the funded status as of December 31, 2017. If the employer's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2015 is 72%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	14.60%	14.60%
Minimum 2019-2021 Rate	11.60%	8.60%
Maximum 2019-2021 Rate	17.60%	20.60%

Executive Summary

Accounting Information

Milliman is not an accounting or audit firm and cannot provide accounting advice. Milliman is not responsible for the interpretation of, or compliance with, accounting standards; citations to, and descriptions of accounting standards provided in this report are for reference purposes only. The information provided in this section is intended to assist the employer in completing its financial statements, but any accounting determination should be reviewed by your auditor.

Pension

In June 2012 the GASB issued Statement No. 68, which replaced GASB 27 and governs employer financial reporting for fiscal years beginning after June 15, 2014. The new standard replaced many of the key elements of the prior reporting requirements. Under the new rules, employers are required to record a balance sheet liability for their unfunded pension obligations. In addition, the timing and coordination of plan and employer reporting has changed under the new requirements. GASB 68 information for employers will be provided separately by PERS and is not included in this report.

Schedule of Funding Progress

Under GASB 27, the Schedule of Funding Progress for Tier 1/Tier 2 pension liabilities was reported in the Required Supplementary Information. This schedule is no longer required now that GASB 68 has replaced GASB 27. However, for additional information and the sake of historical comparison, the updated schedule is shown below for the last several valuations. For employers with side accounts, the actuarial value of assets in this Schedule includes the value of the employer's side accounts.

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (b - a)	Funded Ratio (a ÷ b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a) ÷ c)
12/31/2010	\$316,335	\$333,084	\$16,749	95%	\$75,225	22%
12/31/2011	334,703	375,388	40,685	89%	84,296	48%
12/31/2012	394,320	394,366	46	100%	82,896	0%
12/31/2013	463,170	409,045	(54,125)	113%	80,187	(67%)
12/31/2014	424,262	558,462	134,200	76%	87,726	153%
12/31/2015	425,260	591,506	166,246	72%	91,460	182%

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) is a cost-sharing pool under Statement No. 45 of the Governmental Accounting Standards Board (GASB 45). Consequently, each employer reports the contractually required contribution. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 was calculated as a part of this valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
	Tier 1 / Tier 2	OPSRP	
		General Service	Police & Fire
July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern employer financial reporting for retiree healthcare obligations for fiscal years beginning after June 15, 2017. In general, the changes required by GASB 75 parallel those that occurred for pension reporting when GASB 68 replaced GASB 27. Accounting information for reporting under GASB 75 will be provided separately and is not included in this report.

Executive Summary

Principal Valuation Results

A summary of principal valuation results from the current valuation and the prior valuation follows. Any changes in actuarial assumptions, methods or plan provisions between the two valuations are described later in this report. More detailed information can be found in the system-wide actuarial valuation report.

Brownsville Rural Fire Protection District

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
T1/T2 UAL	\$166,246	\$134,200
Allocated pooled OPSRP UAL	13,002	10,029
Side account	0	0
Net unfunded pension actuarial accrued liability	179,248	144,229
Combined valuation payroll	91,460	87,726
Net pension UAL as a percentage of payroll	196%	164%
Calculated side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	\$444	\$697

In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer’s combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.

Executive Summary

Principal Valuation Results (continued)

Tier 1/Tier 2

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
Normal cost	\$17,868	\$17,103
Tier 1/Tier 2 valuation payroll	91,460	87,726
Tier 1/Tier 2 pension normal cost rate	19.54%	19.50%
Tier 1/ Tier 2 Actuarial accrued liability	\$591,506	\$558,462
Actuarial asset value	425,260	424,262
Tier 1/Tier 2 Unfunded actuarial accrued liability	166,246	134,200
Tier 1/ Tier 2 Funded status	72%	76%
Combined valuation payroll	\$91,460	\$87,726
Tier 1/Tier 2 UAL as a percentage of payroll	182%	153%
Tier 1/Tier 2 UAL rate (includes Multnomah Fire District #10)	(4.94%)	(4.90%)
Tier 1/Tier 2 active members ¹	1	1
Tier 1/Tier 2 dormant members	0	0
Tier 1/Tier 2 retirees and beneficiaries	1	1

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
General service normal cost	\$342.2	\$301.3
OPSRP general service valuation payroll	4,266.9	3,720.4
General service normal cost rate	8.02%	8.10%
Police and fire normal cost	\$69.9	\$59.6
OPSRP police and fire valuation payroll	546.4	462.3
Police and fire normal cost rate	12.79%	12.90%
Actuarial accrued liability	\$3,742.5	\$3,064.1
Actuarial asset value	2,389.1	2,024.6
Unfunded actuarial accrued liability	1,353.5	1,039.5
Funded status	64%	66%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	14%	11%
UAL rate	1.27%	1.01%

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
RHIA		
Normal cost	\$3.3	\$3.5
Tier 1 / Tier 2 valuation payroll	4,730.8	4,933.1
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	\$465.6	\$468.4
Actuarial asset value	419.3	395.9
Unfunded actuarial accrued liability	46.3	72.5
Funded status	90%	85%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	0%	1%
UAL rate	0.43%	0.43%

Side Account Information

Reconciliation of Side Accounts

The following table reconciles the total side account from the beginning of the year to the end of the year. Side account transfers were calculated by PERS and made on a monthly basis. The amount of these transfers is shown in the table below.

All information in this table has been provided by PERS.

	New	Continuing	Total
1. Side account as of December 31, 2014	N/A		
2. Deposits made during 2015		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2015			
5. Side account earnings during 2015			
6. Side account as of December 31, 2015 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2015	December 31, 2014
Side account 1	\$0	\$0
Side account 2	0	0
Side account 3	0	0
Total	\$0	\$0

Development of Side Account Rate

The rate relief attributable to an employer's side account is determined by amortizing the side account balance on the valuation date over a fixed period, and expressing the result as a percentage of combined valuation payroll. For side accounts established prior to December 31, 2009, the fixed period ends December 31, 2027. For side accounts established at a later date, the fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2015	December 31, 2014
1. Total side account	\$0	\$0
2. Combined valuation payroll	91,460	87,726
3. Average Amortization factor	9.504	10.118
4. Total side account rate (-1. ÷ 2. ÷ 3.)¹	0.00%	0.00%

¹ For employers with more than one side account, the Total Side Account Rate is determined by calculating the rate on each side account separately and adding the rates together.

Tier 1/Tier 2 Valuation Results

Assets

A summary of the market value of pension assets, and reconciliation from the prior year are shown below.

Summary of Market Value of Tier 1/Tier 2 Pension Assets

	December 31, 2015	December 31, 2014
1. Member reserves	\$17,445	\$17,299
2. Employer reserves	261,939	244,127
3. Benefits in force reserve	145,877	162,836
4. Total market value of assets (1. + 2. + 3.)	\$425,260	\$424,262

The market value of member and employer reserves is provided by PERS. The benefits in force reserve provided by PERS is allocated each year among employers in proportion to their liabilities for retired members and beneficiaries.

Reconciliation of Tier 1/Tier 2 Pension Assets

	December 31, 2014 to December 31, 2015
1. Market value of assets at beginning of year	\$424,262
2. Regular employer contributions	10,805
3. Benefit payments and expense	(26,528)
4. Adjustments ¹	7,274
5. Interest credited	9,447
6. Total transferred from side accounts	0
7. Market value of assets at end of year (1. + 2. + 3. + 4. + 5. + 6.)	\$425,260

¹ Note the adjustment item above includes a reallocation of the benefits in force reserve, transfers to Multnomah Fire District #10, and other adjustments made by PERS.

Tier 1/Tier 2 Valuation Results

Liabilities

Normal Cost

The normal cost represents the value of benefits assigned to the next year of service by the actuarial cost method. If all actuarial assumptions are met, the normal cost represents the amount that would need to be contributed each year to fund plan benefits. Amounts shown below include assumed administrative expenses, which are allocated pro-rata based on normal cost.

Summary of Normal Cost by Tier/Member Classification

	December 31, 2015	December 31, 2014
Tier 1 Police & Fire	\$0	\$0
Tier 1 General Service	0	0
Tier 2 Police & Fire	17,868	17,103
Tier 2 General Service	0	0
Total	\$17,868	\$17,103

Change in Tier 1/Tier 2 Normal Cost

The following table shows the impact of the assumption, method, and plan changes on normal cost as of December 31, 2015.

	Before Changes	After Changes	Net Change
Normal Cost	\$17,868	\$17,868	\$0

Tier 1/Tier 2 Valuation Results

Liabilities

Actuarial Accrued Liability

The actuarial accrued liability represents the value of benefits allocated to service performed before the valuation date by the actuarial cost method. If all actuarial assumptions are met, the actuarial accrued liability represents the amount of assets that would need to be accumulated as of the valuation date to provide for the portion of benefits allocated to service already performed.

Summary of Actuarial Accrued Liability by Tier/Member Classification

	December 31, 2015	December 31, 2014
Active Members		
▪ Tier 1 Police & Fire	\$0	\$0
▪ Tier 1 General Service	0	0
▪ Tier 2 Police & Fire	276,530	242,565
▪ Tier 2 General Service	0	0
▪ Total Active Members	\$276,530	\$242,565
Dormant Members	0	0
Retired Members and Beneficiaries	314,976	315,897
Total Actuarial Accrued Liability	\$591,506	\$558,462

Change in Tier 1/Tier 2 Actuarial Accrued Liability

The following table shows the impact of the assumption, method, and plan changes on the actuarial accrued liability as of December 31, 2015.

	Before Changes	After Changes	Net Change
Actuarial Accrued Liability	\$591,506	\$591,506	\$0

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Summary of UAL

The UAL represents the difference between the assets accumulated and the liability attributed to prior years of service by the cost method.

	December 31, 2015	December 31, 2014
1. Actuarial accrued liability	\$591,506	\$558,462
2. Actuarial value of assets	425,260	424,262
3. Unfunded accrued liability (1. – 2.)	166,246	134,200
4. Funded percentage (2. ÷ 1.)	72%	76%
5. Combined valuation payroll	\$91,460	\$87,726
6. Unfunded accrued liability as % of combined valuation payroll (3. ÷ 5.)	182%	153%

Reconciliation of UAL Bases

Beginning with the December 31, 2013 actuarial valuation, each odd-year valuation establishes a 20-year closed-period amortization schedule for outstanding Tier 1/Tier 2 UAL amounts. Amortization schedules are calculated based on the total Tier 1/Tier 2 UAL as of that valuation date less the remaining unamortized balance of previously established Tier 1/Tier 2 UAL bases.

Amortization Base	UAL December 31, 2014	Payment	Interest	UAL December 31, 2015	Next Year's Payment
December 31, 2013	(\$54,240)	(\$4,063)	(\$3,906)	(\$54,083)	(\$4,205)
December 31, 2015	N/A	N/A	N/A	\$220,329	\$15,943
Total				\$166,246	\$11,738

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Actuarial Gain or Loss since Prior Valuation

The system-wide actuarial valuation report contains a detailed analysis of gains and losses since the last valuation. The table below shows the gain or loss for the individual employer.

1. Expected actuarial accrued liability	
a. Actuarial accrued liability at December 31, 2014	\$558,462
b. Normal cost at December 31, 2014 (excluding assumed expenses)	16,361
c. Benefit payments during 2015	(26,323)
d. Interest at 7.50% to December 31, 2015	41,511
e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)	590,011
f. Change in actuarial accrued liability due to assumption, method, and plan changes	0
g. Expected actuarial accrued liability at December 31, 2015 (e. + f.)	590,011
2. Actuarial accrued liability at December 31, 2015	591,506
3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)	(1,495)
4. Expected actuarial value of assets	
a. Actuarial value of assets at December 31, 2014	424,262
b. Contributions for 2015 ¹	10,805
c. Benefit payments and expenses during 2015	(26,528)
d. Interest at 7.50% to December 31, 2015	31,230
e. Expected actuarial value of assets at December 31, 2015 (a. + b. + c. + d.)	439,769
5. Actuarial value of assets at December 31, 2015	425,260
6. Gain/(loss) on actuarial value of assets (5. - 4.e.)	(14,509)
7. Total actuarial gain/(loss) (3. + 6.)	(\$16,004)

Unfunded Accrued Liability Reconciliation

A reconciliation of the Tier 1/Tier 2 UAL from December 31, 2014 is provided below.

1. UAL at December 31, 2014	\$134,200
2. Expected increase	16,042
3. Liability (gain)/loss	1,495
4. Asset (gain)/loss	14,509
5. Change due to changes in assumptions, methods, and plan provisions	0
6. UAL at December 31, 2015 (1. + 2. + 3. + 4. + 5.)	\$166,246

¹ Includes rate relief from side accounts.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Normal Cost Rate

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

Development of Tier 1/Tier 2 Normal Cost Rate

	December 31, 2015			December 31, 2014		
	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate
Tier 1 Police & Fire	\$0	\$0	0.00%	\$0	\$0	0.00%
Tier 1 General Service	0	0	0.00%	0	0	0.00%
Tier 2 Police & Fire	17,868	91,460	19.54%	17,103	87,726	19.50%
Tier 2 General Service	0	0	0.00%	0	0	0.00%
Total	\$17,868	\$91,460	19.54%	\$17,103	\$87,726	19.50%

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Development of Tier 1/Tier 2 UAL Rates

The UAL rate is determined by calculating the next year's scheduled payment to the UAL as a percentage of combined valuation payroll.

	December 31, 2015	December 31, 2014
1. Total Tier 1/Tier 2 UAL	\$166,246	\$134,200
2. Next year's Tier 1/Tier 2 UAL payment	11,738	9,572
3. Combined valuation payroll	91,460	87,726
4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)	12.83%	10.91%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	19.54%	19.50%
b. Tier 1/Tier 2 UAL rate	12.83%	10.91%
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate (a. + b. + c.)	32.52%	30.56%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Adjustments Due to Rate Collar and Minimum Rate Requirements

Employer contribution rates are generally limited to change by no more than the greater of 3 percent of payroll or 20 percent from the current contribution rate. However, if the funded percentage excluding side accounts is below 60 percent or above 140 percent the rate collar doubles in size. If the funded percentage excluding side accounts is between 60 and 70 percent or 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

The table below shows the current contribution rate for the period from July 1, 2015 through June 30, 2017, develops the maximum and minimum contribution rates effective July 1, 2017 based on the collar, and calculates the net adjustment due to the collar and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

1. Current net Tier 1/Tier 2 pension contribution rate		11.60%
2. Employer contribution rate attributable to side accounts		0.00%
3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)		11.60%
4. Size of rate collar		
a. 20% of current employer contribution rate (20% x 3.)		2.32%
b. Preliminary size of rate collar (maximum of 3% or a.)		3.00%
c. Funded percentage		72%
d. Size of rate collar (If c. < 60% or c. > 140%, 2 x b. If c. is 70%-130%, b. Otherwise, a graded rate between b. and 2 x b.)		3.00%
5. July 1, 2017 minimum employer contribution rate	(3. – 4.d. but not < 0%)	8.60%
6. July 1, 2017 maximum employer contribution rate	(3. + 4.d.)	14.60%
7. July 1, 2017 total pension rate, before adjustment		32.52%
8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)		(17.92%)
9. July 1, 2017 Tier 1/Tier 2 UAL rate, before collar		12.83%
10. July 1, 2017 Tier 1/Tier 2 UAL rate, after collar	(8. + 9.)	(5.09%)
11. July 1, 2017 Tier 1/Tier 2 pension rate, after collar		14.60%
12. Tier 1/Tier 2 retiree healthcare rate		0.50%
13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)		0.00%
14. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment		19.54%
15. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)		19.54%
16. July 1, 2017 Tier 1/Tier 2 pension rate, after minimum adjustment	(11. + 13.)	14.60%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Post-Rate Collar)

The table below summarizes the employer's pension contribution rate for Tier 1 /Tier 2 after adjustments for the rate collar and the 6 percent of payroll minimum employer contribution rate.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	19.54%	19.50%
b. Tier 1/Tier 2 UAL rate	(5.09%)	(5.05%)
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate <i>(a. + b. + c., minimum of 5.50%)</i>	14.60%	14.60%

Data

Demographic Information

Employer Valuation Payroll

	General Service	Police & Fire	Total
Tier 1	\$0	\$0	\$0
Tier 2	0	91,460	91,460
Tier 1/Tier 2 valuation payroll	0	91,460	91,460
OPSRP valuation payroll	0	0	0
Combined valuation payroll	\$0	\$91,460	\$91,460

Employer Member Census

	December 31							
	2015				2014			
	Tier 1	Tier 2	OPSRP	Total	Tier 1	Tier 2	OPSRP	Total
Active Members ¹								
General Service	0	0	0	0	0	0	0	0
Police & Fire	0	1	0	1	0	1	0	1
Total	0	1	0	1	0	1	0	1
Active Members with previous service segments with the employer								
General Service	0	0	N/A	0	0	0	N/A	0
Police & Fire	0	0	N/A	0	0	0	N/A	0
Total	0	0	N/A	0	0	0	N/A	0
Dormant Members								
General Service	0	0	0	0	0	0	0	0
Police & Fire	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0
Retired Members and Beneficiaries								
General Service	0	0	0	0	0	0	0	0
Police & Fire	1	0	0	1	1	0	0	1
Total	1	0	0	1	1	0	0	1
Grand Total Number of Members	1	1	0	2	1	1	0	2

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Data

Demographic Information (continued)

Employer Tier 1/Tier 2 Active Members as of December 31, 2015

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
<20										
20-24										
25-29										
30-34										
35-39										
40-44										
45-49										
50-54			1							1
55-59										
60-64										
65-69										
70-74										
75+										
Total	0	0	1	0	0	0	0	0	0	1

Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2015

Dormant Members			Retired Members and Beneficiaries		
Age	Count	Average Deferred Monthly Benefit	Age	Count	Average Monthly Benefit
<20			<45		
20-24			45-49		
25-29			50-54		
30-34			55-59		
35-39			60-64	1	1,684
40-44			65-69		
45-49			70-74		
50-54			75-79		
55-59			80-84		
60-64			85-89		
65-69			90-94		
70-74			95-99		
75+			100+		
Total			Total	1	1,684

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2015 valuation can be found in the system-wide actuarial valuation report.

Actuarial Methods and Valuation Procedures

A brief summary of the methods used in this valuation is shown below:

<i>Actuarial cost method</i>	Entry Age Normal.
<i>Amortization Method</i>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. Gains and losses between subsequent odd-year valuations will be amortized as a level percentage of projected combined valuation payroll over a closed 20 year period.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.</p>

Economic Assumptions

A brief summary of the key economic assumptions used in this valuation is shown below:

<i>Net investment return</i>	7.50% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.50% compounded annually on members' regular account balances.</p> <p>7.50% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 6.3% in 2016 to 4.4% in 2094.
<i>Administrative Expenses</i>	<p>\$5.5 million added to OPSRP normal cost.</p> <p>\$33.0 million added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2014 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

There were no changes in actuarial methods and allocation procedures since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA actuarial methods and allocation procedures is provided as part of the system-wide valuation report.

Changes in Assumptions

There were no changes in assumptions since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA assumptions is provided as part of the system-wide valuation report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Glossary

Actuarial Accrued Liability

The portion of the present value of prospective benefits allocated to service and compensation before the valuation date in accordance with the actuarial cost method.

Actuarial Asset Value

The value of assets used in calculating the required contributions. The actuarial asset value may be equal to the fair market value of assets, or it may spread the recognition of certain investment gains or losses over a period of years in accordance with an asset valuation method.

Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disablement and retirement; rates of investment earnings and other relevant items.

Actuarial Cost Method

Sometimes called "funding method," a particular technique used by actuaries to establish the amount and incidence of the annual actuarial cost of pension plan benefits, or normal cost, and the related unfunded actuarial accrued liability. Ordinarily, the annual contribution to the plan comprises the normal cost and an amount for amortization of the unfunded actuarial accrued liability.

Actuarial Gain or (Loss)

A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions, during the period between two actuarial valuation dates, as determined in accordance with a particular actuarial cost method.

Combined Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for both Tier 1/Tier 2 and OPSRP active members. This payroll is used to calculate UAL rates.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

Employer Contribution Rate

Consists of the normal cost rate and the UAL rates, plus adjustments for other items such as side account rate offsets.

Funded Status

The actuarial value of assets expressed as a percentage of the actuarial accrued liability.

Normal Cost

The annual cost allocated to the current year, under the actuarial cost method in use. The normal cost divided by the applicable payroll is the normal cost rate.

OPSRP Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for OPSRP active members. This payroll is used to calculate OPSRP normal cost rates.

Glossary

Pre-SLGRP Liability

The sum of Pre-SLGRP Pooled Liabilities and Transition Liabilities.

Pre-SLGRP Pooled Liability

The difference between the total UAL and the UAL attributable to the SLGRP for a pool of employers that joined the SLGRP. There are currently two pre-SLGRP pools. One was created for State Agencies and Community Colleges when the SLGRP was formed. The other one was created when the Local Government Rate Pool joined the SLGRP.

Present Value

Sometimes called “actuarial present value,” the estimated cost (as of the valuation date) of a series of future payments. The present value is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Rate Collar

A methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution rate and funded status.

Required Supplementary Information (RSI)

Schedules, statistical data, and other information that are an essential part of financial reporting and should be presented with, but are not part of, the basic financial statements of a governmental entity.

Statement No. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions.

Statement No. 68 of the Governmental Accounting Standards Board (GASB 68)

The accounting standard governing a state or local governmental employer’s accounting for pensions for fiscal years beginning after June 15, 2014.

Statement No. 75 of the Governmental Accounting Standards Board (GASB 75)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

The difference between the total UAL and the UAL attributable to the SLGRP for an individual employer that joined the SLGRP or the Local Government Rate Pool.

Unfunded Accrued Liability (UAL)

The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. The UAL is divided by combined valuation payroll and an amortization factor to determine an initial pre-collar UAL rate. The final UAL rate can be adjusted by the rate collar.



Milliman
111 SW Fifth Avenue, Suite 3700
Portland, OR 97204-3654
503 227 0634

This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

September 2016

Central Oregon Regional Housing Authority/2678
Oregon Public Employees Retirement System

Dear Sir or Madam:

As part of our engagement with the Oregon Public Employees Retirement Board, we performed a system-wide actuarial valuation of the Oregon Public Employees Retirement System (“PERS” or “the System”) as of December 31, 2015. The attached report, which is an informational supplement to the system-wide report, provides you with employer-specific contribution rates that will become effective July 1, 2017. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information will be provided separately by PERS and is not included in this report.

This report reflects the System's benefit provisions in effect as of December 31, 2015. The full development of the valuation results for the OPSRP and Retiree Health Insurance Account (RHIA) programs can be found in the separate system-wide actuarial valuation report. Costs of the IAP (Individual Account Program) are not included in this or the system-wide actuarial valuation report. Further, costs of pension obligation bond payments are not included in this or the system-wide actuarial valuation report.

If you have any questions about this report, please contact Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, OPSRP general service, and OPSRP police and fire payroll,
- Information to assist you in completing GASB 45 financial reporting requirements, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- Detailed development of Tier 1/Tier 2 valuation results,
- A brief summary of methods and assumptions, and
- A brief summary of any changes in System benefit provisions.

Additional information is provided in the system-wide actuarial valuation report, which is available at www.oregon.gov/PERS/Pages/section/financial_reports/financials.aspx.



September 2016
Central Oregon Regional Housing Authority/2678

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the System's staff. This information includes, but is not limited to, System benefit provisions as defined by statute, member census data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for the System have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer a reasonable estimate of anticipated experience affecting the System.

A valuation report is only an estimate of the System's financial condition as of a single date. It can neither predict the System's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of System benefits, only the timing of System contributions. While a valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: System experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the System's funded status); and changes in System benefit provisions or applicable law. Due to the limited scope of this assignment, we did not perform an analysis of the potential range of future measurements. The Board has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in September 2015.

Some of the actuarial computations presented in this report are for purposes of determining the contribution rates effective from July 2017 to June 2019 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.



September 2016
Central Oregon Regional Housing Authority/2678

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the System. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

Additional information is provided in the system-wide actuarial valuation report.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Larrabee".

Matt Larrabee, FSA, EA, MAAA
Principal and Consulting Actuary

A handwritten signature in black ink, appearing to read "Scott Preppernau".

Scott Preppernau, FSA, EA, MAAA
Principal and Consulting Actuary



ACTUARIAL VALUATION REPORT DECEMBER 31, 2015

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

INDEPENDENT EMPLOYERS

Central Oregon Regional Housing Authority -- #2678

September 2016

CONTENTS

Executive Summary	1
<i>Employer Contribution Rates</i>	1
<i>Accounting Information</i>	3
<i>Principal Valuation Results</i>	5
▪ Employer	5
▪ Tier 1/Tier 2	6
▪ OPSRP	7
▪ Retiree Healthcare	7
Side Account Information	8
Tier 1/Tier 2 Valuation Results	10
<i>Assets</i>	10
<i>Liabilities</i>	11
<i>Unfunded Accrued Liability (UAL)</i>	13
<i>Contribution Rate Development</i>	15
Data	20
Brief Summary of Actuarial Methods and Assumptions	22
Brief Summary of Changes in Plan Provisions	24
Glossary	25

Executive Summary

Milliman has prepared this report for Central Oregon Regional Housing Authority to:

- Provide summary December 31, 2015 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2017 through June 30, 2019,
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2015, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45. GASB 68 information will be provided separately by PERS and is not included in this report.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2015 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Central Oregon Regional Housing Authority.

Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2017 through June 30, 2019 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

Employer Rates Effective July 1, 2017 for Central Oregon Regional Housing Authority

	Payroll		
	Tier 1/Tier 2	OPSRP General Service	Police & Fire
Pension			
Normal cost rate	9.86%	8.02%	12.79%
Tier 1/Tier 2 UAL rate ¹	1.12%	1.12%	1.12%
OPSRP UAL rate	1.27%	1.27%	1.27%
Side account rate relief	0.00%	0.00%	0.00%
Net pension contribution rate	12.25%	10.41%	15.18%
Retiree Healthcare			
Normal cost rate	0.07%	0.00%	0.00%
UAL rate	0.43%	0.43%	0.43%
Net retiree healthcare rate	0.50%	0.43%	0.43%
Total net employer contribution rate	12.75%	10.84%	15.61%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate.

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 Biennium

The rate collar limits changes in contribution rates, but does not limit changes in rates for individual employers related to side accounts. The table below shows the possible minimum and maximum rates first effective as of July 1, 2019, which will depend on the funded status as of December 31, 2017. If the employer's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2015 is 87%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	10.98%	10.98%
Minimum 2019-2021 Rate	7.98%	4.98%
Maximum 2019-2021 Rate	13.98%	16.98%

Executive Summary

Accounting Information

Milliman is not an accounting or audit firm and cannot provide accounting advice. Milliman is not responsible for the interpretation of, or compliance with, accounting standards; citations to, and descriptions of accounting standards provided in this report are for reference purposes only. The information provided in this section is intended to assist the employer in completing its financial statements, but any accounting determination should be reviewed by your auditor.

Pension

In June 2012 the GASB issued Statement No. 68, which replaced GASB 27 and governs employer financial reporting for fiscal years beginning after June 15, 2014. The new standard replaced many of the key elements of the prior reporting requirements. Under the new rules, employers are required to record a balance sheet liability for their unfunded pension obligations. In addition, the timing and coordination of plan and employer reporting has changed under the new requirements. GASB 68 information for employers will be provided separately by PERS and is not included in this report.

Schedule of Funding Progress

Under GASB 27, the Schedule of Funding Progress for Tier 1/Tier 2 pension liabilities was reported in the Required Supplementary Information. This schedule is no longer required now that GASB 68 has replaced GASB 27. However, for additional information and the sake of historical comparison, the updated schedule is shown below for the last several valuations. For employers with side accounts, the actuarial value of assets in this Schedule includes the value of the employer's side accounts.

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (b - a)	Funded Ratio (a ÷ b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a) ÷ c)
12/31/2010	\$1,865,855	\$1,680,739	(\$185,116)	111%	\$684,037	(27%)
12/31/2011	1,912,749	1,768,115	(144,634)	108%	812,514	(18%)
12/31/2012	2,154,777	1,718,750	(436,027)	125%	738,745	(59%)
12/31/2013	2,099,560	1,894,256	(205,304)	111%	727,584	(28%)
12/31/2014	2,167,404	2,217,679	50,275	98%	859,032	6%
12/31/2015	2,101,985	2,427,624	325,639	87%	985,333	33%

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) is a cost-sharing pool under Statement No. 45 of the Governmental Accounting Standards Board (GASB 45). Consequently, each employer reports the contractually required contribution. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 was calculated as a part of this valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
	Tier 1 / Tier 2	OPSRP	
		General Service	Police & Fire
July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern employer financial reporting for retiree healthcare obligations for fiscal years beginning after June 15, 2017. In general, the changes required by GASB 75 parallel those that occurred for pension reporting when GASB 68 replaced GASB 27. Accounting information for reporting under GASB 75 will be provided separately and is not included in this report.

Executive Summary

Principal Valuation Results

A summary of principal valuation results from the current valuation and the prior valuation follows. Any changes in actuarial assumptions, methods or plan provisions between the two valuations are described later in this report. More detailed information can be found in the system-wide actuarial valuation report.

Central Oregon Regional Housing Authority

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
T1/T2 UAL	\$325,639	\$50,275
Allocated pooled OPSRP UAL	140,079	98,206
Side account	0	0
Net unfunded pension actuarial accrued liability	465,718	148,481
Combined valuation payroll	985,333	859,032
Net pension UAL as a percentage of payroll	47%	17%
Calculated side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	\$4,784	\$6,828

In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer's combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.

Executive Summary

Principal Valuation Results (continued)

Tier 1/Tier 2

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
Normal cost	\$19,926	\$15,373
Tier 1/Tier 2 valuation payroll	202,101	145,776
Tier 1/Tier 2 pension normal cost rate	9.86%	10.55%
Tier 1/ Tier 2 Actuarial accrued liability	\$2,427,624	\$2,217,679
Actuarial asset value	2,101,985	2,167,404
Tier 1/Tier 2 Unfunded actuarial accrued liability	325,639	50,275
Tier 1/ Tier 2 Funded status	87%	98%
Combined valuation payroll	\$985,333	\$859,032
Tier 1/Tier 2 UAL as a percentage of payroll	33%	6%
Tier 1/Tier 2 UAL rate (includes Multnomah Fire District #10)	1.12%	0.43%
Tier 1/Tier 2 active members ¹	2	2
Tier 1/Tier 2 dormant members	6	6
Tier 1/Tier 2 retirees and beneficiaries	10	9

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
General service normal cost	\$342.2	\$301.3
OPSRP general service valuation payroll	4,266.9	3,720.4
General service normal cost rate	8.02%	8.10%
Police and fire normal cost	\$69.9	\$59.6
OPSRP police and fire valuation payroll	546.4	462.3
Police and fire normal cost rate	12.79%	12.90%
Actuarial accrued liability	\$3,742.5	\$3,064.1
Actuarial asset value	2,389.1	2,024.6
Unfunded actuarial accrued liability	1,353.5	1,039.5
Funded status	64%	66%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	14%	11%
UAL rate	1.27%	1.01%

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
RHIA		
Normal cost	\$3.3	\$3.5
Tier 1 / Tier 2 valuation payroll	4,730.8	4,933.1
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	\$465.6	\$468.4
Actuarial asset value	419.3	395.9
Unfunded actuarial accrued liability	46.3	72.5
Funded status	90%	85%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	0%	1%
UAL rate	0.43%	0.43%

Side Account Information

Reconciliation of Side Accounts

The following table reconciles the total side account from the beginning of the year to the end of the year. Side account transfers were calculated by PERS and made on a monthly basis. The amount of these transfers is shown in the table below.

All information in this table has been provided by PERS.

	New	Continuing	Total
1. Side account as of December 31, 2014	N/A		
2. Deposits made during 2015		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2015			
5. Side account earnings during 2015			
6. Side account as of December 31, 2015 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2015	December 31, 2014
Side account 1	\$0	\$0
Side account 2	0	0
Side account 3	0	0
Total	\$0	\$0

Development of Side Account Rate

The rate relief attributable to an employer's side account is determined by amortizing the side account balance on the valuation date over a fixed period, and expressing the result as a percentage of combined valuation payroll. For side accounts established prior to December 31, 2009, the fixed period ends December 31, 2027. For side accounts established at a later date, the fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2015	December 31, 2014
1. Total side account	\$0	\$0
2. Combined valuation payroll	985,333	859,032
3. Average Amortization factor	9.504	10.118
4. Total side account rate (-1. ÷ 2. ÷ 3.)¹	0.00%	0.00%

¹ For employers with more than one side account, the Total Side Account Rate is determined by calculating the rate on each side account separately and adding the rates together.

Tier 1/Tier 2 Valuation Results

Assets

A summary of the market value of pension assets, and reconciliation from the prior year are shown below.

Summary of Market Value of Tier 1/Tier 2 Pension Assets

	December 31, 2015	December 31, 2014
1. Member reserves	\$277,798	\$327,746
2. Employer reserves	1,157,392	1,165,235
3. Benefits in force reserve	666,796	674,423
4. Total market value of assets (1. + 2. + 3.)	\$2,101,985	\$2,167,404

The market value of member and employer reserves is provided by PERS. The benefits in force reserve provided by PERS is allocated each year among employers in proportion to their liabilities for retired members and beneficiaries.

Reconciliation of Tier 1/Tier 2 Pension Assets

	December 31, 2014 to December 31, 2015
1. Market value of assets at beginning of year	\$2,167,404
2. Regular employer contributions	(170)
3. Benefit payments and expense	(121,258)
4. Adjustments ¹	11,414
5. Interest credited	44,595
6. Total transferred from side accounts	0
7. Market value of assets at end of year (1. + 2. + 3. + 4. + 5. + 6.)	\$2,101,985

¹ Note the adjustment item above includes a reallocation of the benefits in force reserve, transfers to Multnomah Fire District #10, and other adjustments made by PERS.

Tier 1/Tier 2 Valuation Results

Liabilities

Normal Cost

The normal cost represents the value of benefits assigned to the next year of service by the actuarial cost method. If all actuarial assumptions are met, the normal cost represents the amount that would need to be contributed each year to fund plan benefits. Amounts shown below include assumed administrative expenses, which are allocated pro-rata based on normal cost.

Summary of Normal Cost by Tier/Member Classification

	December 31, 2015	December 31, 2014
Tier 1 Police & Fire	\$0	\$0
Tier 1 General Service	8,682	4,581
Tier 2 Police & Fire	0	0
Tier 2 General Service	11,244	10,792
Total	\$19,926	\$15,373

Change in Tier 1/Tier 2 Normal Cost

The following table shows the impact of the assumption, method, and plan changes on normal cost as of December 31, 2015.

	Before Changes	After Changes	Net Change
Normal Cost	\$19,926	\$19,926	\$0

Tier 1/Tier 2 Valuation Results

Liabilities

Actuarial Accrued Liability

The actuarial accrued liability represents the value of benefits allocated to service performed before the valuation date by the actuarial cost method. If all actuarial assumptions are met, the actuarial accrued liability represents the amount of assets that would need to be accumulated as of the valuation date to provide for the portion of benefits allocated to service already performed.

Summary of Actuarial Accrued Liability by Tier/Member Classification

	December 31, 2015	December 31, 2014
Active Members		
▪ Tier 1 Police & Fire	\$0	\$0
▪ Tier 1 General Service	528,014	501,730
▪ Tier 2 Police & Fire	0	0
▪ Tier 2 General Service	365,214	319,312
▪ Total Active Members	\$893,228	\$821,042
Dormant Members	94,656	88,274
Retired Members and Beneficiaries	1,439,740	1,308,363
Total Actuarial Accrued Liability	\$2,427,624	\$2,217,679

Change in Tier 1/Tier 2 Actuarial Accrued Liability

The following table shows the impact of the assumption, method, and plan changes on the actuarial accrued liability as of December 31, 2015.

	Before Changes	After Changes	Net Change
Actuarial Accrued Liability	\$2,427,624	\$2,427,624	\$0

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Summary of UAL

The UAL represents the difference between the assets accumulated and the liability attributed to prior years of service by the cost method.

	December 31, 2015	December 31, 2014
1. Actuarial accrued liability	\$2,427,624	\$2,217,679
2. Actuarial value of assets	2,101,985	2,167,404
3. Unfunded accrued liability (1. – 2.)	325,639	50,275
4. Funded percentage (2. ÷ 1.)	87%	98%
5. Combined valuation payroll	\$985,333	\$859,032
6. Unfunded accrued liability as % of combined valuation payroll (3. ÷ 5.)	33%	6%

Reconciliation of UAL Bases

Beginning with the December 31, 2013 actuarial valuation, each odd-year valuation establishes a 20-year closed-period amortization schedule for outstanding Tier 1/Tier 2 UAL amounts. Amortization schedules are calculated based on the total Tier 1/Tier 2 UAL as of that valuation date less the remaining unamortized balance of previously established Tier 1/Tier 2 UAL bases.

Amortization Base	UAL December 31, 2014	Payment	Interest	UAL December 31, 2015	Next Year's Payment
December 31, 2013	(\$205,742)	(\$15,411)	(\$14,815)	(\$205,146)	(\$15,951)
December 31, 2015	N/A	N/A	N/A	\$530,785	\$38,407
Total				\$325,639	\$22,456

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Actuarial Gain or Loss since Prior Valuation

The system-wide actuarial valuation report contains a detailed analysis of gains and losses since the last valuation. The table below shows the gain or loss for the individual employer.

1. Expected actuarial accrued liability	
a. Actuarial accrued liability at December 31, 2014	\$2,217,679
b. Normal cost at December 31, 2014 (excluding assumed expenses)	14,706
c. Benefit payments during 2015	(120,321)
d. Interest at 7.50% to December 31, 2015	162,365
e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)	2,274,429
f. Change in actuarial accrued liability due to assumption, method, and plan changes	0
g. Expected actuarial accrued liability at December 31, 2015 (e. + f.)	2,274,429
2. Actuarial accrued liability at December 31, 2015	2,427,624
3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)	(153,195)
4. Expected actuarial value of assets	
a. Actuarial value of assets at December 31, 2014	2,167,404
b. Contributions for 2015 ¹	(170)
c. Benefit payments and expenses during 2015	(121,258)
d. Interest at 7.50% to December 31, 2015	158,002
e. Expected actuarial value of assets at December 31, 2015 (a. + b. + c. + d.)	2,203,978
5. Actuarial value of assets at December 31, 2015	2,101,985
6. Gain/(loss) on actuarial value of assets (5. - 4.e.)	(101,993)
7. Total actuarial gain/(loss) (3. + 6.)	(\$255,188)

Unfunded Accrued Liability Reconciliation

A reconciliation of the Tier 1/Tier 2 UAL from December 31, 2014 is provided below.

1. UAL at December 31, 2014	\$50,275
2. Expected increase	20,176
3. Liability (gain)/loss	153,195
4. Asset (gain)/loss	101,993
5. Change due to changes in assumptions, methods, and plan provisions	0
6. UAL at December 31, 2015 (1. + 2. + 3. + 4. + 5.)	\$325,639

¹ Includes rate relief from side accounts.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Normal Cost Rate

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

Development of Tier 1/Tier 2 Normal Cost Rate

	December 31, 2015			December 31, 2014		
	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate
Tier 1 Police & Fire	\$0	\$0	0.00%	\$0	\$0	0.00%
Tier 1 General Service	8,682	98,258	8.84%	4,581	47,092	9.73%
Tier 2 Police & Fire	0	0	0.00%	0	0	0.00%
Tier 2 General Service	11,244	103,843	10.83%	10,792	98,684	10.94%
Total	\$19,926	\$202,101	9.86%	\$15,373	\$145,776	10.55%

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Development of Tier 1/Tier 2 UAL Rates

The UAL rate is determined by calculating the next year's scheduled payment to the UAL as a percentage of combined valuation payroll.

	December 31, 2015	December 31, 2014
1. Total Tier 1/Tier 2 UAL	\$325,639	\$50,275
2. Next year's Tier 1/Tier 2 UAL payment	22,456	3,114
3. Combined valuation payroll	985,333	859,032
4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)	2.28%	0.36%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	9.86%	10.55%
b. Tier 1/Tier 2 UAL rate	2.28%	0.36%
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate (a. + b. + c.)	12.29%	11.06%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Adjustments Due to Rate Collar and Minimum Rate Requirements

Employer contribution rates are generally limited to change by no more than the greater of 3 percent of payroll or 20 percent from the current contribution rate. However, if the funded percentage excluding side accounts is below 60 percent or above 140 percent the rate collar doubles in size. If the funded percentage excluding side accounts is between 60 and 70 percent or 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

The table below shows the current contribution rate for the period from July 1, 2015 through June 30, 2017, develops the maximum and minimum contribution rates effective July 1, 2017 based on the collar, and calculates the net adjustment due to the collar and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

1. Current net Tier 1/Tier 2 pension contribution rate		7.98%
2. Employer contribution rate attributable to side accounts		0.00%
3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)		7.98%
4. Size of rate collar		
a. 20% of current employer contribution rate (20% x 3.)		1.60%
b. Preliminary size of rate collar (maximum of 3% or a.)		3.00%
c. Funded percentage		87%
d. Size of rate collar (If c. < 60% or c. > 140%, 2 x b. If c. is 70%-130%, b. Otherwise, a graded rate between b. and 2 x b.)		3.00%
5. July 1, 2017 minimum employer contribution rate	(3. – 4.d. but not < 0%)	4.98%
6. July 1, 2017 maximum employer contribution rate	(3. + 4.d.)	10.98%
7. July 1, 2017 total pension rate, before adjustment		12.29%
8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)		(1.31%)
9. July 1, 2017 Tier 1/Tier 2 UAL rate, before collar		2.28%
10. July 1, 2017 Tier 1/Tier 2 UAL rate, after collar	(8. + 9.)	0.97%
11. July 1, 2017 Tier 1/Tier 2 pension rate, after collar		10.98%
12. Tier 1/Tier 2 retiree healthcare rate		0.50%
13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)		0.00%
14. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment		9.86%
15. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)		9.86%
16. July 1, 2017 Tier 1/Tier 2 pension rate, after minimum adjustment	(11. + 13.)	10.98%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Post-Rate Collar)

The table below summarizes the employer's pension contribution rate for Tier 1 /Tier 2 after adjustments for the rate collar and the 6 percent of payroll minimum employer contribution rate.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	9.86%	10.55%
b. Tier 1/Tier 2 UAL rate	0.97%	0.28%
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate <i>(a. + b. + c., minimum of 5.50%)</i>	10.98%	10.98%

Data

Demographic Information

Employer Valuation Payroll

	General Service	Police & Fire	Total
Tier 1	\$98,258	\$0	\$98,258
Tier 2	103,843	0	103,843
Tier 1/Tier 2 valuation payroll	202,101	0	202,101
OPSRP valuation payroll	783,232	0	783,232
Combined valuation payroll	\$985,333	\$0	\$985,333

Employer Member Census

	December 31							
	2015				2014			
	Tier 1	Tier 2	OPSRP	Total	Tier 1	Tier 2	OPSRP	Total
Active Members ¹								
General Service	1	1	12	14	1	1	11	13
Police & Fire	0	0	0	0	0	0	0	0
Total	1	1	12	14	1	1	11	13
Active Members with previous service segments with the employer								
General Service	4	4	N/A	8	5	4	N/A	9
Police & Fire	0	0	N/A	0	0	0	N/A	0
Total	4	4	N/A	8	5	4	N/A	9
Dormant Members								
General Service	3	3	2	8	3	3	3	9
Police & Fire	0	0	0	0	0	0	0	0
Total	3	3	2	8	3	3	3	9
Retired Members and Beneficiaries								
General Service	7	3	0	10	6	3	0	9
Police & Fire	0	0	0	0	0	0	0	0
Total	7	3	0	10	6	3	0	9
Grand Total Number of Members	15	11	14	40	15	11	14	40

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Data

Demographic Information (continued)

Employer Tier 1/Tier 2 Active Members as of December 31, 2015

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
<20										
20-24										
25-29										
30-34										
35-39										
40-44				1						1
45-49										
50-54										
55-59			1							1
60-64										
65-69										
70-74										
75+										
Total	0	0	1	1	0	0	0	0	0	2

Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2015

Dormant Members			Retired Members and Beneficiaries		
Age	Count	Average Deferred Monthly Benefit	Age	Count	Average Monthly Benefit
<20			<45		
20-24			45-49		
25-29			50-54		
30-34			55-59		
35-39			60-64	3	1,964
40-44			65-69	4	432
45-49	2	0	70-74	1	103
50-54	1	99	75-79	2	173
55-59			80-84		
60-64	1	419	85-89		
65-69	1	55	90-94		
70-74			95-99		
75+	1	567	100+		
Total	6	190	Total	10	807

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2015 valuation can be found in the system-wide actuarial valuation report.

Actuarial Methods and Valuation Procedures

A brief summary of the methods used in this valuation is shown below:

<i>Actuarial cost method</i>	Entry Age Normal.
<i>Amortization Method</i>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. Gains and losses between subsequent odd-year valuations will be amortized as a level percentage of projected combined valuation payroll over a closed 20 year period.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.</p>

Economic Assumptions

A brief summary of the key economic assumptions used in this valuation is shown below:

<i>Net investment return</i>	7.50% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.50% compounded annually on members' regular account balances.</p> <p>7.50% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 6.3% in 2016 to 4.4% in 2094.
<i>Administrative Expenses</i>	<p>\$5.5 million added to OPSRP normal cost.</p> <p>\$33.0 million added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2014 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

There were no changes in actuarial methods and allocation procedures since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA actuarial methods and allocation procedures is provided as part of the system-wide valuation report.

Changes in Assumptions

There were no changes in assumptions since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA assumptions is provided as part of the system-wide valuation report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Glossary

Actuarial Accrued Liability

The portion of the present value of prospective benefits allocated to service and compensation before the valuation date in accordance with the actuarial cost method.

Actuarial Asset Value

The value of assets used in calculating the required contributions. The actuarial asset value may be equal to the fair market value of assets, or it may spread the recognition of certain investment gains or losses over a period of years in accordance with an asset valuation method.

Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disablement and retirement; rates of investment earnings and other relevant items.

Actuarial Cost Method

Sometimes called “funding method,” a particular technique used by actuaries to establish the amount and incidence of the annual actuarial cost of pension plan benefits, or normal cost, and the related unfunded actuarial accrued liability. Ordinarily, the annual contribution to the plan comprises the normal cost and an amount for amortization of the unfunded actuarial accrued liability.

Actuarial Gain or (Loss)

A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions, during the period between two actuarial valuation dates, as determined in accordance with a particular actuarial cost method.

Combined Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for both Tier 1/Tier 2 and OPSRP active members. This payroll is used to calculate UAL rates.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

Employer Contribution Rate

Consists of the normal cost rate and the UAL rates, plus adjustments for other items such as side account rate offsets.

Funded Status

The actuarial value of assets expressed as a percentage of the actuarial accrued liability.

Normal Cost

The annual cost allocated to the current year, under the actuarial cost method in use. The normal cost divided by the applicable payroll is the normal cost rate.

OPSRP Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for OPSRP active members. This payroll is used to calculate OPSRP normal cost rates.

Glossary

Pre-SLGRP Liability

The sum of Pre-SLGRP Pooled Liabilities and Transition Liabilities.

Pre-SLGRP Pooled Liability

The difference between the total UAL and the UAL attributable to the SLGRP for a pool of employers that joined the SLGRP. There are currently two pre-SLGRP pools. One was created for State Agencies and Community Colleges when the SLGRP was formed. The other one was created when the Local Government Rate Pool joined the SLGRP.

Present Value

Sometimes called “actuarial present value,” the estimated cost (as of the valuation date) of a series of future payments. The present value is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Rate Collar

A methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution rate and funded status.

Required Supplementary Information (RSI)

Schedules, statistical data, and other information that are an essential part of financial reporting and should be presented with, but are not part of, the basic financial statements of a governmental entity.

Statement No. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions.

Statement No. 68 of the Governmental Accounting Standards Board (GASB 68)

The accounting standard governing a state or local governmental employer’s accounting for pensions for fiscal years beginning after June 15, 2014.

Statement No. 75 of the Governmental Accounting Standards Board (GASB 75)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

The difference between the total UAL and the UAL attributable to the SLGRP for an individual employer that joined the SLGRP or the Local Government Rate Pool.

Unfunded Accrued Liability (UAL)

The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. The UAL is divided by combined valuation payroll and an amortization factor to determine an initial pre-collar UAL rate. The final UAL rate can be adjusted by the rate collar.



Milliman
111 SW Fifth Avenue, Suite 3700
Portland, OR 97204-3654
503 227 0634

This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

September 2016

Chiloquin Agency Lake Rural Fire Protection District/2645
Oregon Public Employees Retirement System

Dear Sir or Madam:

As part of our engagement with the Oregon Public Employees Retirement Board, we performed a system-wide actuarial valuation of the Oregon Public Employees Retirement System (“PERS” or “the System”) as of December 31, 2015. The attached report, which is an informational supplement to the system-wide report, provides you with employer-specific contribution rates that will become effective July 1, 2017. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information will be provided separately by PERS and is not included in this report.

This report reflects the System's benefit provisions in effect as of December 31, 2015. The full development of the valuation results for the OPSRP and Retiree Health Insurance Account (RHIA) programs can be found in the separate system-wide actuarial valuation report. Costs of the IAP (Individual Account Program) are not included in this or the system-wide actuarial valuation report. Further, costs of pension obligation bond payments are not included in this or the system-wide actuarial valuation report.

If you have any questions about this report, please contact Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, OPSRP general service, and OPSRP police and fire payroll,
- Information to assist you in completing GASB 45 financial reporting requirements, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- Detailed development of Tier 1/Tier 2 valuation results,
- A brief summary of methods and assumptions, and
- A brief summary of any changes in System benefit provisions.

Additional information is provided in the system-wide actuarial valuation report, which is available at www.oregon.gov/PERS/Pages/section/financial_reports/financials.aspx.



September 2016
Chiloquin Agency Lake Rural Fire Protection District/2645

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the System's staff. This information includes, but is not limited to, System benefit provisions as defined by statute, member census data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for the System have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer a reasonable estimate of anticipated experience affecting the System.

A valuation report is only an estimate of the System's financial condition as of a single date. It can neither predict the System's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of System benefits, only the timing of System contributions. While a valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: System experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the System's funded status); and changes in System benefit provisions or applicable law. Due to the limited scope of this assignment, we did not perform an analysis of the potential range of future measurements. The Board has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in September 2015.

Some of the actuarial computations presented in this report are for purposes of determining the contribution rates effective from July 2017 to June 2019 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.



September 2016
Chiloquin Agency Lake Rural Fire Protection District/2645

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the System. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

Additional information is provided in the system-wide actuarial valuation report.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Larrabee".

Matt Larrabee, FSA, EA, MAAA
Principal and Consulting Actuary

A handwritten signature in black ink, appearing to read "Scott Preppernau".

Scott Preppernau, FSA, EA, MAAA
Principal and Consulting Actuary



ACTUARIAL VALUATION REPORT DECEMBER 31, 2015

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

INDEPENDENT EMPLOYERS

Chiloquin Agency Lake Rural Fire Protection District -- #2645

September 2016

CONTENTS

Executive Summary **1**

Employer Contribution Rates 1

Accounting Information 3

Principal Valuation Results 5

 ▪ Employer 5

 ▪ Tier 1/Tier 2 6

 ▪ OPSRP 7

 ▪ Retiree Healthcare 7

Side Account Information **8**

Tier 1/Tier 2 Valuation Results **10**

Assets 10

Liabilities 11

Unfunded Accrued Liability (UAL) 13

Contribution Rate Development 15

Data **20**

Brief Summary of Actuarial Methods and Assumptions **22**

Brief Summary of Changes in Plan Provisions **24**

Glossary **25**

Executive Summary

Milliman has prepared this report for Chiloquin Agency Lake Rural Fire Protection District to:

- Provide summary December 31, 2015 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2017 through June 30, 2019,
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2015, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45. GASB 68 information will be provided separately by PERS and is not included in this report.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2015 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Chiloquin Agency Lake Rural Fire Protection District.

Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2017 through June 30, 2019 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

Employer Rates Effective July 1, 2017 for Chiloquin Agency Lake Rural Fire Protection District

	Payroll		
	Tier 1/Tier 2	OPSRP General Service	OPSRP Police & Fire
Pension			
Normal cost rate	19.42%	8.02%	12.79%
Tier 1/Tier 2 UAL rate ¹	(2.01%)	(2.01%)	(2.01%)
OPSRP UAL rate	1.27%	1.27%	1.27%
Side account rate relief	0.00%	0.00%	0.00%
Net pension contribution rate	18.68%	7.28%	12.05%
Retiree Healthcare			
Normal cost rate	0.07%	0.00%	0.00%
UAL rate	0.43%	0.43%	0.43%
Net retiree healthcare rate	0.50%	0.43%	0.43%
Total net employer contribution rate	19.18%	7.71%	12.48%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate.

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 Biennium

The rate collar limits changes in contribution rates, but does not limit changes in rates for individual employers related to side accounts. The table below shows the possible minimum and maximum rates first effective as of July 1, 2019, which will depend on the funded status as of December 31, 2017. If the employer's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2015 is 67%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	17.41%	17.41%
Minimum 2019-2021 Rate	13.93%	10.45%
Maximum 2019-2021 Rate	20.89%	24.37%

Executive Summary

Accounting Information

Milliman is not an accounting or audit firm and cannot provide accounting advice. Milliman is not responsible for the interpretation of, or compliance with, accounting standards; citations to, and descriptions of accounting standards provided in this report are for reference purposes only. The information provided in this section is intended to assist the employer in completing its financial statements, but any accounting determination should be reviewed by your auditor.

Pension

In June 2012 the GASB issued Statement No. 68, which replaced GASB 27 and governs employer financial reporting for fiscal years beginning after June 15, 2014. The new standard replaced many of the key elements of the prior reporting requirements. Under the new rules, employers are required to record a balance sheet liability for their unfunded pension obligations. In addition, the timing and coordination of plan and employer reporting has changed under the new requirements. GASB 68 information for employers will be provided separately by PERS and is not included in this report.

Schedule of Funding Progress

Under GASB 27, the Schedule of Funding Progress for Tier 1/Tier 2 pension liabilities was reported in the Required Supplementary Information. This schedule is no longer required now that GASB 68 has replaced GASB 27. However, for additional information and the sake of historical comparison, the updated schedule is shown below for the last several valuations. For employers with side accounts, the actuarial value of assets in this Schedule includes the value of the employer's side accounts.

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (b - a)	Funded Ratio (a ÷ b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a) ÷ c)
12/31/2010	\$261,306	\$306,711	\$45,405	85%	\$94,590	48%
12/31/2011	279,554	332,887	53,333	84%	94,119	57%
12/31/2012	334,249	359,616	25,367	93%	98,398	26%
12/31/2013	396,856	391,591	(5,265)	101%	99,051	(5%)
12/31/2014	332,916	461,228	128,312	72%	32,170	399%
12/31/2015	323,028	479,440	156,412	67%	78,010	201%

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) is a cost-sharing pool under Statement No. 45 of the Governmental Accounting Standards Board (GASB 45). Consequently, each employer reports the contractually required contribution. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 was calculated as a part of this valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
	Tier 1 / Tier 2	OPSRP	
		General Service	Police & Fire
July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern employer financial reporting for retiree healthcare obligations for fiscal years beginning after June 15, 2017. In general, the changes required by GASB 75 parallel those that occurred for pension reporting when GASB 68 replaced GASB 27. Accounting information for reporting under GASB 75 will be provided separately and is not included in this report.

Executive Summary

Principal Valuation Results

A summary of principal valuation results from the current valuation and the prior valuation follows. Any changes in actuarial assumptions, methods or plan provisions between the two valuations are described later in this report. More detailed information can be found in the system-wide actuarial valuation report.

Chiloquin Agency Lake Rural Fire Protection District

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
T1/T2 UAL	\$156,412	\$128,312
Allocated pooled OPSRP UAL	11,090	3,678
Side account	0	0
Net unfunded pension actuarial accrued liability	167,502	131,990
Combined valuation payroll	78,010	32,170
Net pension UAL as a percentage of payroll	215%	410%
Calculated side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	\$379	\$256

In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer’s combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.

Executive Summary

Principal Valuation Results (continued)

Tier 1/Tier 2

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
Normal cost	\$15,148	\$3,174
Tier 1/Tier 2 valuation payroll	78,010	32,170
Tier 1/Tier 2 pension normal cost rate	19.42%	9.87%
Tier 1/ Tier 2 Actuarial accrued liability	\$479,440	\$461,228
Actuarial asset value	323,028	332,916
Tier 1/Tier 2 Unfunded actuarial accrued liability	156,412	128,312
Tier 1/ Tier 2 Funded status	67%	72%
Combined valuation payroll	\$78,010	\$32,170
Tier 1/Tier 2 UAL as a percentage of payroll	201%	399%
Tier 1/Tier 2 UAL rate (includes Multnomah Fire District #10)	(2.01%)	6.64%
Tier 1/Tier 2 active members ¹	2	1
Tier 1/Tier 2 dormant members	1	1
Tier 1/Tier 2 retirees and beneficiaries	2	2

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
General service normal cost	\$342.2	\$301.3
OPSRP general service valuation payroll	4,266.9	3,720.4
General service normal cost rate	8.02%	8.10%
Police and fire normal cost	\$69.9	\$59.6
OPSRP police and fire valuation payroll	546.4	462.3
Police and fire normal cost rate	12.79%	12.90%
Actuarial accrued liability	\$3,742.5	\$3,064.1
Actuarial asset value	2,389.1	2,024.6
Unfunded actuarial accrued liability	1,353.5	1,039.5
Funded status	64%	66%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	14%	11%
UAL rate	1.27%	1.01%

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
RHIA		
Normal cost	\$3.3	\$3.5
Tier 1 / Tier 2 valuation payroll	4,730.8	4,933.1
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	\$465.6	\$468.4
Actuarial asset value	419.3	395.9
Unfunded actuarial accrued liability	46.3	72.5
Funded status	90%	85%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	0%	1%
UAL rate	0.43%	0.43%

Side Account Information

Reconciliation of Side Accounts

The following table reconciles the total side account from the beginning of the year to the end of the year. Side account transfers were calculated by PERS and made on a monthly basis. The amount of these transfers is shown in the table below.

All information in this table has been provided by PERS.

	New	Continuing	Total
1. Side account as of December 31, 2014	N/A		
2. Deposits made during 2015		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2015			
5. Side account earnings during 2015			
6. Side account as of December 31, 2015 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2015	December 31, 2014
Side account 1	\$0	\$0
Side account 2	0	0
Side account 3	0	0
Total	\$0	\$0

Development of Side Account Rate

The rate relief attributable to an employer's side account is determined by amortizing the side account balance on the valuation date over a fixed period, and expressing the result as a percentage of combined valuation payroll. For side accounts established prior to December 31, 2009, the fixed period ends December 31, 2027. For side accounts established at a later date, the fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2015	December 31, 2014
1. Total side account	\$0	\$0
2. Combined valuation payroll	78,010	32,170
3. Average Amortization factor	9.504	10.118
4. Total side account rate (-1. ÷ 2. ÷ 3.)¹	0.00%	0.00%

¹ For employers with more than one side account, the Total Side Account Rate is determined by calculating the rate on each side account separately and adding the rates together.

Tier 1/Tier 2 Valuation Results

Assets

A summary of the market value of pension assets, and reconciliation from the prior year are shown below.

Summary of Market Value of Tier 1/Tier 2 Pension Assets

	December 31, 2015	December 31, 2014
1. Member reserves	\$11,925	\$10,956
2. Employer reserves	123,672	113,262
3. Benefits in force reserve	187,431	208,698
4. Total market value of assets (1. + 2. + 3.)	\$323,028	\$332,916

The market value of member and employer reserves is provided by PERS. The benefits in force reserve provided by PERS is allocated each year among employers in proportion to their liabilities for retired members and beneficiaries.

Reconciliation of Tier 1/Tier 2 Pension Assets

	December 31, 2014 to December 31, 2015
1. Market value of assets at beginning of year	\$332,916
2. Regular employer contributions	8,101
3. Benefit payments and expense	(34,085)
4. Adjustments ¹	9,593
5. Interest credited	6,502
6. Total transferred from side accounts	0
7. Market value of assets at end of year (1. + 2. + 3. + 4. + 5. + 6.)	\$323,028

¹ Note the adjustment item above includes a reallocation of the benefits in force reserve, transfers to Multnomah Fire District #10, and other adjustments made by PERS.

Tier 1/Tier 2 Valuation Results

Liabilities

Normal Cost

The normal cost represents the value of benefits assigned to the next year of service by the actuarial cost method. If all actuarial assumptions are met, the normal cost represents the amount that would need to be contributed each year to fund plan benefits. Amounts shown below include assumed administrative expenses, which are allocated pro-rata based on normal cost.

Summary of Normal Cost by Tier/Member Classification

	December 31, 2015	December 31, 2014
Tier 1 Police & Fire	\$11,927	\$0
Tier 1 General Service	0	0
Tier 2 Police & Fire	0	0
Tier 2 General Service	3,221	3,174
Total	\$15,148	\$3,174

Change in Tier 1/Tier 2 Normal Cost

The following table shows the impact of the assumption, method, and plan changes on normal cost as of December 31, 2015.

	Before Changes	After Changes	Net Change
Normal Cost	\$15,148	\$15,148	\$0

Tier 1/Tier 2 Valuation Results

Liabilities

Actuarial Accrued Liability

The actuarial accrued liability represents the value of benefits allocated to service performed before the valuation date by the actuarial cost method. If all actuarial assumptions are met, the actuarial accrued liability represents the amount of assets that would need to be accumulated as of the valuation date to provide for the portion of benefits allocated to service already performed.

Summary of Actuarial Accrued Liability by Tier/Member Classification

	December 31, 2015	December 31, 2014
Active Members		
▪ Tier 1 Police & Fire	\$11,374	\$0
▪ Tier 1 General Service	0	0
▪ Tier 2 Police & Fire	0	0
▪ Tier 2 General Service	33,670	28,797
▪ Total Active Members	\$45,044	\$28,797
Dormant Members	29,696	27,561
Retired Members and Beneficiaries	404,700	404,870
Total Actuarial Accrued Liability	\$479,440	\$461,228

Change in Tier 1/Tier 2 Actuarial Accrued Liability

The following table shows the impact of the assumption, method, and plan changes on the actuarial accrued liability as of December 31, 2015.

	Before Changes	After Changes	Net Change
Actuarial Accrued Liability	\$479,440	\$479,440	\$0

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Summary of UAL

The UAL represents the difference between the assets accumulated and the liability attributed to prior years of service by the cost method.

	December 31, 2015	December 31, 2014
1. Actuarial accrued liability	\$479,440	\$461,228
2. Actuarial value of assets	323,028	332,916
3. Unfunded accrued liability (1. – 2.)	156,412	128,312
4. Funded percentage (2. ÷ 1.)	67%	72%
5. Combined valuation payroll	\$78,010	\$32,170
6. Unfunded accrued liability as % of combined valuation payroll (3. ÷ 5.)	201%	399%

Reconciliation of UAL Bases

Beginning with the December 31, 2013 actuarial valuation, each odd-year valuation establishes a 20-year closed-period amortization schedule for outstanding Tier 1/Tier 2 UAL amounts. Amortization schedules are calculated based on the total Tier 1/Tier 2 UAL as of that valuation date less the remaining unamortized balance of previously established Tier 1/Tier 2 UAL bases.

Amortization Base	UAL December 31, 2014	Payment	Interest	UAL December 31, 2015	Next Year's Payment
December 31, 2013	(\$5,276)	(\$395)	(\$380)	(\$5,261)	(\$409)
December 31, 2015	N/A	N/A	N/A	\$161,673	\$11,698
Total				\$156,412	\$11,289

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Actuarial Gain or Loss since Prior Valuation

The system-wide actuarial valuation report contains a detailed analysis of gains and losses since the last valuation. The table below shows the gain or loss for the individual employer.

1. Expected actuarial accrued liability	
a. Actuarial accrued liability at December 31, 2014	\$461,228
b. Normal cost at December 31, 2014 (excluding assumed expenses)	3,036
c. Benefit payments during 2015	(33,821)
d. Interest at 7.50% to December 31, 2015	33,438
e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)	463,881
f. Change in actuarial accrued liability due to assumption, method, and plan changes	0
g. Expected actuarial accrued liability at December 31, 2015 (e. + f.)	463,881
2. Actuarial accrued liability at December 31, 2015	479,440
3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)	(15,559)
4. Expected actuarial value of assets	
a. Actuarial value of assets at December 31, 2014	332,916
b. Contributions for 2015 ¹	8,101
c. Benefit payments and expenses during 2015	(34,085)
d. Interest at 7.50% to December 31, 2015	23,994
e. Expected actuarial value of assets at December 31, 2015 (a. + b. + c. + d.)	330,927
5. Actuarial value of assets at December 31, 2015	323,028
6. Gain/(loss) on actuarial value of assets (5. - 4.e.)	(7,899)
7. Total actuarial gain/(loss) (3. + 6.)	(\$23,458)

Unfunded Accrued Liability Reconciliation

A reconciliation of the Tier 1/Tier 2 UAL from December 31, 2014 is provided below.

1. UAL at December 31, 2014	\$128,312
2. Expected increase	4,642
3. Liability (gain)/loss	15,559
4. Asset (gain)/loss	7,899
5. Change due to changes in assumptions, methods, and plan provisions	0
6. UAL at December 31, 2015 (1. + 2. + 3. + 4. + 5.)	\$156,412

¹ Includes rate relief from side accounts.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Normal Cost Rate

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

Development of Tier 1/Tier 2 Normal Cost Rate

	December 31, 2015			December 31, 2014		
	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate
Tier 1 Police & Fire	\$11,927	\$45,425	26.26%	\$0	\$0	0.00%
Tier 1 General Service	0	0	0.00%	0	0	0.00%
Tier 2 Police & Fire	0	0	0.00%	0	0	0.00%
Tier 2 General Service	3,221	32,585	9.88%	3,174	32,170	9.87%
Total	\$15,148	\$78,010	19.42%	\$3,174	\$32,170	9.87%

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Development of Tier 1/Tier 2 UAL Rates

The UAL rate is determined by calculating the next year's scheduled payment to the UAL as a percentage of combined valuation payroll.

	December 31, 2015	December 31, 2014
1. Total Tier 1/Tier 2 UAL	\$156,412	\$128,312
2. Next year's Tier 1/Tier 2 UAL payment	11,289	9,271
3. Combined valuation payroll	78,010	32,170
4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)	14.47%	28.82%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	19.42%	9.87%
b. Tier 1/Tier 2 UAL rate	14.47%	28.82%
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate (a. + b. + c.)	34.04%	38.84%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Adjustments Due to Rate Collar and Minimum Rate Requirements

Employer contribution rates are generally limited to change by no more than the greater of 3 percent of payroll or 20 percent from the current contribution rate. However, if the funded percentage excluding side accounts is below 60 percent or above 140 percent the rate collar doubles in size. If the funded percentage excluding side accounts is between 60 and 70 percent or 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

The table below shows the current contribution rate for the period from July 1, 2015 through June 30, 2017, develops the maximum and minimum contribution rates effective July 1, 2017 based on the collar, and calculates the net adjustment due to the collar and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

1. Current net Tier 1/Tier 2 pension contribution rate		13.51%
2. Employer contribution rate attributable to side accounts		0.00%
3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)		13.51%
4. Size of rate collar		
a. 20% of current employer contribution rate (20% x 3.)		2.70%
b. Preliminary size of rate collar (maximum of 3% or a.)		3.00%
c. Funded percentage		67%
d. Size of rate collar (If c. < 60% or c. > 140%, 2 x b. If c. is 70%-130%, b. Otherwise, a graded rate between b. and 2 x b.)		3.90%
5. July 1, 2017 minimum employer contribution rate	(3. – 4.d. but not < 0%)	9.61%
6. July 1, 2017 maximum employer contribution rate	(3. + 4.d.)	17.41%
7. July 1, 2017 total pension rate, before adjustment		34.04%
8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)		(16.63%)
9. July 1, 2017 Tier 1/Tier 2 UAL rate, before collar		14.47%
10. July 1, 2017 Tier 1/Tier 2 UAL rate, after collar	(8. + 9.)	(2.16%)
11. July 1, 2017 Tier 1/Tier 2 pension rate, after collar		17.41%
12. Tier 1/Tier 2 retiree healthcare rate		0.50%
13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)		0.00%
14. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment		19.42%
15. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)		19.42%
16. July 1, 2017 Tier 1/Tier 2 pension rate, after minimum adjustment	(11. + 13.)	17.41%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Post-Rate Collar)

The table below summarizes the employer's pension contribution rate for Tier 1 /Tier 2 after adjustments for the rate collar and the 6 percent of payroll minimum employer contribution rate.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	19.42%	9.87%
b. Tier 1/Tier 2 UAL rate	(2.16%)	6.49%
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate <i>(a. + b. + c., minimum of 5.50%)</i>	17.41%	16.51%

Data

Demographic Information

Employer Valuation Payroll

	General Service	Police & Fire	Total
Tier 1	\$0	\$45,425	\$45,425
Tier 2	32,585	0	32,585
Tier 1/Tier 2 valuation payroll	32,585	45,425	78,010
OPSRP valuation payroll	0	0	0
Combined valuation payroll	\$32,585	\$45,425	\$78,010

Employer Member Census

	December 31							
	2015				2014			
	Tier 1	Tier 2	OPSRP	Total	Tier 1	Tier 2	OPSRP	Total
Active Members ¹								
General Service	0	1	0	1	0	1	0	1
Police & Fire	1	0	0	1	0	0	0	0
Total	1	1	0	2	0	1	0	1
Active Members with previous service segments with the employer								
General Service	0	0	N/A	0	0	0	N/A	0
Police & Fire	0	0	N/A	0	0	0	N/A	0
Total	0	0	N/A	0	0	0	N/A	0
Dormant Members								
General Service	0	0	0	0	0	0	0	0
Police & Fire	1	0	0	1	1	0	0	1
Total	1	0	0	1	1	0	0	1
Retired Members and Beneficiaries								
General Service	1	0	0	1	1	0	0	1
Police & Fire	1	0	0	1	1	0	0	1
Total	2	0	0	2	2	0	0	2
Grand Total Number of Members	4	1	0	5	3	1	0	4

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Data

Demographic Information (continued)

Employer Tier 1/Tier 2 Active Members as of December 31, 2015

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
<20										
20-24										
25-29										
30-34										
35-39			1							1
40-44										
45-49					1					1
50-54										
55-59										
60-64										
65-69										
70-74										
75+										
Total	0	0	1	0	1	0	0	0	0	2

Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2015

Dormant Members			Retired Members and Beneficiaries		
Age	Count	Average Deferred Monthly Benefit	Age	Count	Average Monthly Benefit
<20			<45		
20-24			45-49		
25-29			50-54		
30-34			55-59		
35-39			60-64	2	1,052
40-44			65-69		
45-49			70-74		
50-54			75-79		
55-59			80-84		
60-64	1	183	85-89		
65-69			90-94		
70-74			95-99		
75+			100+		
Total	1	183	Total	2	1,052

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2015 valuation can be found in the system-wide actuarial valuation report.

Actuarial Methods and Valuation Procedures

A brief summary of the methods used in this valuation is shown below:

<i>Actuarial cost method</i>	Entry Age Normal.
<i>Amortization Method</i>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. Gains and losses between subsequent odd-year valuations will be amortized as a level percentage of projected combined valuation payroll over a closed 20 year period.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.</p>

Economic Assumptions

A brief summary of the key economic assumptions used in this valuation is shown below:

<i>Net investment return</i>	7.50% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.50% compounded annually on members' regular account balances.</p> <p>7.50% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 6.3% in 2016 to 4.4% in 2094.
<i>Administrative Expenses</i>	<p>\$5.5 million added to OPSRP normal cost.</p> <p>\$33.0 million added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2014 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

There were no changes in actuarial methods and allocation procedures since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA actuarial methods and allocation procedures is provided as part of the system-wide valuation report.

Changes in Assumptions

There were no changes in assumptions since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA assumptions is provided as part of the system-wide valuation report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Glossary

Actuarial Accrued Liability

The portion of the present value of prospective benefits allocated to service and compensation before the valuation date in accordance with the actuarial cost method.

Actuarial Asset Value

The value of assets used in calculating the required contributions. The actuarial asset value may be equal to the fair market value of assets, or it may spread the recognition of certain investment gains or losses over a period of years in accordance with an asset valuation method.

Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disablement and retirement; rates of investment earnings and other relevant items.

Actuarial Cost Method

Sometimes called "funding method," a particular technique used by actuaries to establish the amount and incidence of the annual actuarial cost of pension plan benefits, or normal cost, and the related unfunded actuarial accrued liability. Ordinarily, the annual contribution to the plan comprises the normal cost and an amount for amortization of the unfunded actuarial accrued liability.

Actuarial Gain or (Loss)

A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions, during the period between two actuarial valuation dates, as determined in accordance with a particular actuarial cost method.

Combined Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for both Tier 1/Tier 2 and OPSRP active members. This payroll is used to calculate UAL rates.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

Employer Contribution Rate

Consists of the normal cost rate and the UAL rates, plus adjustments for other items such as side account rate offsets.

Funded Status

The actuarial value of assets expressed as a percentage of the actuarial accrued liability.

Normal Cost

The annual cost allocated to the current year, under the actuarial cost method in use. The normal cost divided by the applicable payroll is the normal cost rate.

OPSRP Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for OPSRP active members. This payroll is used to calculate OPSRP normal cost rates.

Glossary

Pre-SLGRP Liability

The sum of Pre-SLGRP Pooled Liabilities and Transition Liabilities.

Pre-SLGRP Pooled Liability

The difference between the total UAL and the UAL attributable to the SLGRP for a pool of employers that joined the SLGRP. There are currently two pre-SLGRP pools. One was created for State Agencies and Community Colleges when the SLGRP was formed. The other one was created when the Local Government Rate Pool joined the SLGRP.

Present Value

Sometimes called “actuarial present value,” the estimated cost (as of the valuation date) of a series of future payments. The present value is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Rate Collar

A methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution rate and funded status.

Required Supplementary Information (RSI)

Schedules, statistical data, and other information that are an essential part of financial reporting and should be presented with, but are not part of, the basic financial statements of a governmental entity.

Statement No. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions.

Statement No. 68 of the Governmental Accounting Standards Board (GASB 68)

The accounting standard governing a state or local governmental employer’s accounting for pensions for fiscal years beginning after June 15, 2014.

Statement No. 75 of the Governmental Accounting Standards Board (GASB 75)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

The difference between the total UAL and the UAL attributable to the SLGRP for an individual employer that joined the SLGRP or the Local Government Rate Pool.

Unfunded Accrued Liability (UAL)

The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. The UAL is divided by combined valuation payroll and an amortization factor to determine an initial pre-collar UAL rate. The final UAL rate can be adjusted by the rate collar.



Milliman
111 SW Fifth Avenue, Suite 3700
Portland, OR 97204-3654
503 227 0634

This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

September 2016

City of Athena/2167
Oregon Public Employees Retirement System

Dear Sir or Madam:

As part of our engagement with the Oregon Public Employees Retirement Board, we performed a system-wide actuarial valuation of the Oregon Public Employees Retirement System (“PERS” or “the System”) as of December 31, 2015. The attached report, which is an informational supplement to the system-wide report, provides you with employer-specific contribution rates that will become effective July 1, 2017. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information will be provided separately by PERS and is not included in this report.

This report reflects the System's benefit provisions in effect as of December 31, 2015. The full development of the valuation results for the OPSRP and Retiree Health Insurance Account (RHIA) programs can be found in the separate system-wide actuarial valuation report. Costs of the IAP (Individual Account Program) are not included in this or the system-wide actuarial valuation report. Further, costs of pension obligation bond payments are not included in this or the system-wide actuarial valuation report.

If you have any questions about this report, please contact Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, OPSRP general service, and OPSRP police and fire payroll,
- Information to assist you in completing GASB 45 financial reporting requirements, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- Detailed development of Tier 1/Tier 2 valuation results,
- A brief summary of methods and assumptions, and
- A brief summary of any changes in System benefit provisions.

Additional information is provided in the system-wide actuarial valuation report, which is available at www.oregon.gov/PERS/Pages/section/financial_reports/financials.aspx.

September 2016
City of Athena/2167

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the System's staff. This information includes, but is not limited to, System benefit provisions as defined by statute, member census data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for the System have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer a reasonable estimate of anticipated experience affecting the System.

A valuation report is only an estimate of the System's financial condition as of a single date. It can neither predict the System's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of System benefits, only the timing of System contributions. While a valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: System experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the System's funded status); and changes in System benefit provisions or applicable law. Due to the limited scope of this assignment, we did not perform an analysis of the potential range of future measurements. The Board has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in September 2015.

Some of the actuarial computations presented in this report are for purposes of determining the contribution rates effective from July 2017 to June 2019 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.



September 2016
City of Athena/2167

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the System. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

Additional information is provided in the system-wide actuarial valuation report.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Larrabee".

Matt Larrabee, FSA, EA, MAAA
Principal and Consulting Actuary

A handwritten signature in black ink, appearing to read "Scott Preppernau".

Scott Preppernau, FSA, EA, MAAA
Principal and Consulting Actuary



ACTUARIAL VALUATION REPORT DECEMBER 31, 2015

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

INDEPENDENT EMPLOYERS

City of Athena -- #2167

September 2016

CONTENTS

Executive Summary **1**

Employer Contribution Rates 1

Accounting Information 3

Principal Valuation Results 5

 ▪ Employer 5

 ▪ Tier 1/Tier 2 6

 ▪ OPSRP 7

 ▪ Retiree Healthcare 7

Side Account Information **8**

Tier 1/Tier 2 Valuation Results **10**

Assets 10

Liabilities 11

Unfunded Accrued Liability (UAL) 13

Contribution Rate Development 15

Data **20**

Brief Summary of Actuarial Methods and Assumptions **22**

Brief Summary of Changes in Plan Provisions **24**

Glossary **25**

Executive Summary

Milliman has prepared this report for City of Athena to:

- Provide summary December 31, 2015 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2017 through June 30, 2019,
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2015, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45. GASB 68 information will be provided separately by PERS and is not included in this report.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2015 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to City of Athena.

Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2017 through June 30, 2019 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

Employer Rates Effective July 1, 2017 for City of Athena

	Payroll		
	Tier 1/Tier 2	OPSRP General Service	OPSRP Police & Fire
Pension			
Normal cost rate	10.18%	8.02%	12.79%
Tier 1/Tier 2 UAL rate ¹	(0.80%)	(0.80%)	(0.80%)
OPSRP UAL rate	1.27%	1.27%	1.27%
Side account rate relief	0.00%	0.00%	0.00%
Net pension contribution rate	10.65%	8.49%	13.26%
Retiree Healthcare			
Normal cost rate	0.07%	0.00%	0.00%
UAL rate	0.43%	0.43%	0.43%
Net retiree healthcare rate	0.50%	0.43%	0.43%
Total net employer contribution rate	11.15%	8.92%	13.69%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate.

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 Biennium

The rate collar limits changes in contribution rates, but does not limit changes in rates for individual employers related to side accounts. The table below shows the possible minimum and maximum rates first effective as of July 1, 2019, which will depend on the funded status as of December 31, 2017. If the employer's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2015 is 81%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	9.38%	9.38%
Minimum 2019-2021 Rate	6.38%	3.38%
Maximum 2019-2021 Rate	12.38%	15.38%

Executive Summary

Accounting Information

Milliman is not an accounting or audit firm and cannot provide accounting advice. Milliman is not responsible for the interpretation of, or compliance with, accounting standards; citations to, and descriptions of accounting standards provided in this report are for reference purposes only. The information provided in this section is intended to assist the employer in completing its financial statements, but any accounting determination should be reviewed by your auditor.

Pension

In June 2012 the GASB issued Statement No. 68, which replaced GASB 27 and governs employer financial reporting for fiscal years beginning after June 15, 2014. The new standard replaced many of the key elements of the prior reporting requirements. Under the new rules, employers are required to record a balance sheet liability for their unfunded pension obligations. In addition, the timing and coordination of plan and employer reporting has changed under the new requirements. GASB 68 information for employers will be provided separately by PERS and is not included in this report.

Schedule of Funding Progress

Under GASB 27, the Schedule of Funding Progress for Tier 1/Tier 2 pension liabilities was reported in the Required Supplementary Information. This schedule is no longer required now that GASB 68 has replaced GASB 27. However, for additional information and the sake of historical comparison, the updated schedule is shown below for the last several valuations. For employers with side accounts, the actuarial value of assets in this Schedule includes the value of the employer's side accounts.

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (b - a)	Funded Ratio (a ÷ b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a) ÷ c)
12/31/2010	\$1,308,772	\$1,215,902	(\$92,870)	108%	\$286,337	(32%)
12/31/2011	1,296,055	1,269,742	(26,313)	102%	272,640	(10%)
12/31/2012	1,436,547	1,326,518	(110,029)	108%	338,455	(33%)
12/31/2013	1,616,907	1,412,565	(204,342)	114%	349,824	(58%)
12/31/2014	1,685,442	1,690,436	4,994	100%	309,517	2%
12/31/2015	1,502,601	1,852,973	350,372	81%	264,259	133%

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) is a cost-sharing pool under Statement No. 45 of the Governmental Accounting Standards Board (GASB 45). Consequently, each employer reports the contractually required contribution. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 was calculated as a part of this valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
	Tier 1 / Tier 2	OPSRP	
		General Service	Police & Fire
July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern employer financial reporting for retiree healthcare obligations for fiscal years beginning after June 15, 2017. In general, the changes required by GASB 75 parallel those that occurred for pension reporting when GASB 68 replaced GASB 27. Accounting information for reporting under GASB 75 will be provided separately and is not included in this report.

Executive Summary

Principal Valuation Results

A summary of principal valuation results from the current valuation and the prior valuation follows. Any changes in actuarial assumptions, methods or plan provisions between the two valuations are described later in this report. More detailed information can be found in the system-wide actuarial valuation report.

City of Athena

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
T1/T2 UAL	\$350,372	\$4,994
Allocated pooled OPSRP UAL	37,568	35,385
Side account	0	0
Net unfunded pension actuarial accrued liability	387,940	40,379
Combined valuation payroll	264,259	309,517
Net pension UAL as a percentage of payroll	147%	13%
Calculated side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	\$1,283	\$2,460

In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer's combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.

Executive Summary

Principal Valuation Results (continued)

Tier 1/Tier 2

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
Normal cost	\$15,180	\$22,920
Tier 1/Tier 2 valuation payroll	149,151	199,999
Tier 1/Tier 2 pension normal cost rate	10.18%	11.46%
Tier 1/ Tier 2 Actuarial accrued liability	\$1,852,973	\$1,690,436
Actuarial asset value	1,502,601	1,685,442
Tier 1/Tier 2 Unfunded actuarial accrued liability	350,372	4,994
Tier 1/ Tier 2 Funded status	81%	100%
Combined valuation payroll	\$264,259	\$309,517
Tier 1/Tier 2 UAL as a percentage of payroll	133%	2%
Tier 1/Tier 2 UAL rate (includes Multnomah Fire District #10)	(0.80%)	(2.08%)
Tier 1/Tier 2 active members ¹	3	4
Tier 1/Tier 2 dormant members	3	3
Tier 1/Tier 2 retirees and beneficiaries	5	4

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
General service normal cost	\$342.2	\$301.3
OPSRP general service valuation payroll	4,266.9	3,720.4
General service normal cost rate	8.02%	8.10%
Police and fire normal cost	\$69.9	\$59.6
OPSRP police and fire valuation payroll	546.4	462.3
Police and fire normal cost rate	12.79%	12.90%
Actuarial accrued liability	\$3,742.5	\$3,064.1
Actuarial asset value	2,389.1	2,024.6
Unfunded actuarial accrued liability	1,353.5	1,039.5
Funded status	64%	66%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	14%	11%
UAL rate	1.27%	1.01%

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
RHIA		
Normal cost	\$3.3	\$3.5
Tier 1 / Tier 2 valuation payroll	4,730.8	4,933.1
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	\$465.6	\$468.4
Actuarial asset value	419.3	395.9
Unfunded actuarial accrued liability	46.3	72.5
Funded status	90%	85%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	0%	1%
UAL rate	0.43%	0.43%

Side Account Information

Reconciliation of Side Accounts

The following table reconciles the total side account from the beginning of the year to the end of the year. Side account transfers were calculated by PERS and made on a monthly basis. The amount of these transfers is shown in the table below.

All information in this table has been provided by PERS.

	New	Continuing	Total
1. Side account as of December 31, 2014	N/A		
2. Deposits made during 2015		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2015			
5. Side account earnings during 2015			
6. Side account as of December 31, 2015 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2015	December 31, 2014
Side account 1	\$0	\$0
Side account 2	0	0
Side account 3	0	0
Total	\$0	\$0

Development of Side Account Rate

The rate relief attributable to an employer's side account is determined by amortizing the side account balance on the valuation date over a fixed period, and expressing the result as a percentage of combined valuation payroll. For side accounts established prior to December 31, 2009, the fixed period ends December 31, 2027. For side accounts established at a later date, the fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2015	December 31, 2014
1. Total side account	\$0	\$0
2. Combined valuation payroll	264,259	309,517
3. Average Amortization factor	9.504	10.118
4. Total side account rate (-1. ÷ 2. ÷ 3.)¹	0.00%	0.00%

¹ For employers with more than one side account, the Total Side Account Rate is determined by calculating the rate on each side account separately and adding the rates together.

Tier 1/Tier 2 Valuation Results

Assets

A summary of the market value of pension assets, and reconciliation from the prior year are shown below.

Summary of Market Value of Tier 1/Tier 2 Pension Assets

	December 31, 2015	December 31, 2014
1. Member reserves	\$123,577	\$201,288
2. Employer reserves	850,276	1,024,248
3. Benefits in force reserve	528,749	459,906
4. Total market value of assets (1. + 2. + 3.)	\$1,502,601	\$1,685,442

The market value of member and employer reserves is provided by PERS. The benefits in force reserve provided by PERS is allocated each year among employers in proportion to their liabilities for retired members and beneficiaries.

Reconciliation of Tier 1/Tier 2 Pension Assets

	December 31, 2014 to December 31, 2015
1. Market value of assets at beginning of year	\$1,685,442
2. Regular employer contributions	5,643
3. Benefit payments and expense	(96,154)
4. Adjustments ¹	(127,342)
5. Interest credited	35,013
6. Total transferred from side accounts	0
7. Market value of assets at end of year (1. + 2. + 3. + 4. + 5. + 6.)	\$1,502,601

¹ Note the adjustment item above includes a reallocation of the benefits in force reserve, transfers to Multnomah Fire District #10, and other adjustments made by PERS.

Tier 1/Tier 2 Valuation Results

Liabilities

Normal Cost

The normal cost represents the value of benefits assigned to the next year of service by the actuarial cost method. If all actuarial assumptions are met, the normal cost represents the amount that would need to be contributed each year to fund plan benefits. Amounts shown below include assumed administrative expenses, which are allocated pro-rata based on normal cost.

Summary of Normal Cost by Tier/Member Classification

	December 31, 2015	December 31, 2014
Tier 1 Police & Fire	\$956	\$9,386
Tier 1 General Service	4,108	3,960
Tier 2 Police & Fire	0	0
Tier 2 General Service	10,116	9,574
Total	\$15,180	\$22,920

Change in Tier 1/Tier 2 Normal Cost

The following table shows the impact of the assumption, method, and plan changes on normal cost as of December 31, 2015.

	Before Changes	After Changes	Net Change
Normal Cost	\$15,180	\$15,180	\$0

Tier 1/Tier 2 Valuation Results

Liabilities

Actuarial Accrued Liability

The actuarial accrued liability represents the value of benefits allocated to service performed before the valuation date by the actuarial cost method. If all actuarial assumptions are met, the actuarial accrued liability represents the amount of assets that would need to be accumulated as of the valuation date to provide for the portion of benefits allocated to service already performed.

Summary of Actuarial Accrued Liability by Tier/Member Classification

	December 31, 2015	December 31, 2014
Active Members		
▪ Tier 1 Police & Fire	\$152,509	\$294,875
▪ Tier 1 General Service	104,376	98,236
▪ Tier 2 Police & Fire	26,126	21,645
▪ Tier 2 General Service	229,298	198,032
▪ Total Active Members	\$512,309	\$612,788
Dormant Members	198,995	185,442
Retired Members and Beneficiaries	1,141,669	892,206
Total Actuarial Accrued Liability	\$1,852,973	\$1,690,436

Change in Tier 1/Tier 2 Actuarial Accrued Liability

The following table shows the impact of the assumption, method, and plan changes on the actuarial accrued liability as of December 31, 2015.

	Before Changes	After Changes	Net Change
Actuarial Accrued Liability	\$1,852,973	\$1,852,973	\$0

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Summary of UAL

The UAL represents the difference between the assets accumulated and the liability attributed to prior years of service by the cost method.

	December 31, 2015	December 31, 2014
1. Actuarial accrued liability	\$1,852,973	\$1,690,436
2. Actuarial value of assets	1,502,601	1,685,442
3. Unfunded accrued liability (1. – 2.)	350,372	4,994
4. Funded percentage (2. ÷ 1.)	81%	100%
5. Combined valuation payroll	\$264,259	\$309,517
6. Unfunded accrued liability as % of combined valuation payroll (3. ÷ 5.)	133%	2%

Reconciliation of UAL Bases

Beginning with the December 31, 2013 actuarial valuation, each odd-year valuation establishes a 20-year closed-period amortization schedule for outstanding Tier 1/Tier 2 UAL amounts. Amortization schedules are calculated based on the total Tier 1/Tier 2 UAL as of that valuation date less the remaining unamortized balance of previously established Tier 1/Tier 2 UAL bases.

Amortization Base	UAL December 31, 2014	Payment	Interest	UAL December 31, 2015	Next Year's Payment
December 31, 2013	(\$204,778)	(\$15,339)	(\$14,746)	(\$204,185)	(\$15,876)
December 31, 2015	N/A	N/A	N/A	\$554,557	\$40,127
Total				\$350,372	\$24,251

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Actuarial Gain or Loss since Prior Valuation

The system-wide actuarial valuation report contains a detailed analysis of gains and losses since the last valuation. The table below shows the gain or loss for the individual employer.

1. Expected actuarial accrued liability	
a. Actuarial accrued liability at December 31, 2014	\$1,690,436
b. Normal cost at December 31, 2014 (excluding assumed expenses)	21,925
c. Benefit payments during 2015	(95,411)
d. Interest at 7.50% to December 31, 2015	124,027
e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)	1,740,977
f. Change in actuarial accrued liability due to assumption, method, and plan changes	0
g. Expected actuarial accrued liability at December 31, 2015 (e. + f.)	1,740,977
2. Actuarial accrued liability at December 31, 2015	1,852,973
3. Gain/(loss) on actuarial accrued liability (1.g. – 2.)	(111,996)
4. Expected actuarial value of assets	
a. Actuarial value of assets at December 31, 2014	1,685,442
b. Contributions for 2015 ¹	5,643
c. Benefit payments and expenses during 2015	(96,154)
d. Interest at 7.50% to December 31, 2015	123,014
e. Expected actuarial value of assets at December 31, 2015 (a. + b. + c. + d.)	1,717,945
5. Actuarial value of assets at December 31, 2015	1,502,601
6. Gain/(loss) on actuarial value of assets (5. - 4.e.)	(215,343)
7. Total actuarial gain/(loss) (3. + 6.)	(\$327,339)

Unfunded Accrued Liability Reconciliation

A reconciliation of the Tier 1/Tier 2 UAL from December 31, 2014 is provided below.

1. UAL at December 31, 2014	\$4,994
2. Expected increase	18,039
3. Liability (gain)/loss	111,996
4. Asset (gain)/loss	215,343
5. Change due to changes in assumptions, methods, and plan provisions	0
6. UAL at December 31, 2015 (1. + 2. + 3. + 4. + 5.)	\$350,372

¹ Includes rate relief from side accounts.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Normal Cost Rate

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

Development of Tier 1/Tier 2 Normal Cost Rate

	December 31, 2015			December 31, 2014		
	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate
Tier 1 Police & Fire	\$956	\$6,598	14.49%	\$9,386	\$64,768	14.49%
Tier 1 General Service	4,108	35,432	11.59%	3,960	35,000	11.31%
Tier 2 Police & Fire	0	0	0.00%	0	0	0.00%
Tier 2 General Service	10,116	107,121	9.44%	9,574	100,231	9.55%
Total	\$15,180	\$149,151	10.18%	\$22,920	\$199,999	11.46%

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Development of Tier 1/Tier 2 UAL Rates

The UAL rate is determined by calculating the next year's scheduled payment to the UAL as a percentage of combined valuation payroll.

	December 31, 2015	December 31, 2014
1. Total Tier 1/Tier 2 UAL	\$350,372	\$4,994
2. Next year's Tier 1/Tier 2 UAL payment	24,251	(160)
3. Combined valuation payroll	264,259	309,517
4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)	9.18%	(0.05%)

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	10.18%	11.46%
b. Tier 1/Tier 2 UAL rate	9.18%	(0.05%)
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate (a. + b. + c.)	19.51%	11.56%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Adjustments Due to Rate Collar and Minimum Rate Requirements

Employer contribution rates are generally limited to change by no more than the greater of 3 percent of payroll or 20 percent from the current contribution rate. However, if the funded percentage excluding side accounts is below 60 percent or above 140 percent the rate collar doubles in size. If the funded percentage excluding side accounts is between 60 and 70 percent or 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

The table below shows the current contribution rate for the period from July 1, 2015 through June 30, 2017, develops the maximum and minimum contribution rates effective July 1, 2017 based on the collar, and calculates the net adjustment due to the collar and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

1. Current net Tier 1/Tier 2 pension contribution rate		6.38%
2. Employer contribution rate attributable to side accounts		0.00%
3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)		6.38%
4. Size of rate collar		
a. 20% of current employer contribution rate (20% x 3.)		1.28%
b. Preliminary size of rate collar (maximum of 3% or a.)		3.00%
c. Funded percentage		81%
d. Size of rate collar (If c. < 60% or c. > 140%, 2 x b. If c. is 70%-130%, b. Otherwise, a graded rate between b. and 2 x b.)		3.00%
5. July 1, 2017 minimum employer contribution rate	(3. – 4.d. but not < 0%)	3.38%
6. July 1, 2017 maximum employer contribution rate	(3. + 4.d.)	9.38%
7. July 1, 2017 total pension rate, before adjustment		19.51%
8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)		(10.13%)
9. July 1, 2017 Tier 1/Tier 2 UAL rate, before collar		9.18%
10. July 1, 2017 Tier 1/Tier 2 UAL rate, after collar	(8. + 9.)	(0.95%)
11. July 1, 2017 Tier 1/Tier 2 pension rate, after collar		9.38%
12. Tier 1/Tier 2 retiree healthcare rate		0.50%
13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)		0.00%
14. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment		10.18%
15. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)		10.18%
16. July 1, 2017 Tier 1/Tier 2 pension rate, after minimum adjustment	(11. + 13.)	9.38%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Post-Rate Collar)

The table below summarizes the employer's pension contribution rate for Tier 1 /Tier 2 after adjustments for the rate collar and the 6 percent of payroll minimum employer contribution rate.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	10.18%	11.46%
b. Tier 1/Tier 2 UAL rate	(0.95%)	(2.23%)
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate	9.38%	9.38%
<i>(a. + b. + c., minimum of 5.50%)</i>		

Data

Demographic Information

Employer Valuation Payroll

	General Service	Police & Fire	Total
Tier 1	\$35,432	\$6,598	\$42,030
Tier 2	107,121	0	107,121
Tier 1/Tier 2 valuation payroll	142,553	6,598	149,151
OPSRP valuation payroll	115,108	0	115,108
Combined valuation payroll	\$257,661	\$6,598	\$264,259

Employer Member Census

	December 31							
	2015				2014			
	Tier 1	Tier 2	OPSRP	Total	Tier 1	Tier 2	OPSRP	Total
Active Members ¹								
General Service	1	2	2	5	1	2	2	5
Police & Fire	0	0	0	0	1	0	0	1
Total	1	2	2	5	2	2	2	6
Active Members with previous service segments with the employer								
General Service	0	1	N/A	1	0	1	N/A	1
Police & Fire	2	1	N/A	3	2	1	N/A	3
Total	2	2	N/A	4	2	2	N/A	4
Dormant Members								
General Service	1	2	1	4	1	2	1	4
Police & Fire	0	0	0	0	0	0	0	0
Total	1	2	1	4	1	2	1	4
Retired Members and Beneficiaries								
General Service	2	0	0	2	2	0	0	2
Police & Fire	2	1	0	3	1	1	0	2
Total	4	1	0	5	3	1	0	4
Grand Total Number of Members	8	7	3	18	8	7	3	18

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Data

Demographic Information (continued)

Employer Tier 1/Tier 2 Active Members as of December 31, 2015

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
<20										
20-24										
25-29										
30-34										
35-39										
40-44				1						1
45-49										
50-54			1							1
55-59										
60-64					1					1
65-69										
70-74										
75+										
Total	0	0	1	1	1	0	0	0	0	3

Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2015

Dormant Members			Retired Members and Beneficiaries		
Age	Count	Average Deferred Monthly Benefit	Age	Count	Average Monthly Benefit
<20			<45		
20-24			45-49		
25-29			50-54		
30-34			55-59	1	5
35-39			60-64	1	1,454
40-44			65-69	1	3,571
45-49	1	1,750	70-74	1	1,452
50-54			75-79		
55-59	1	374	80-84		
60-64			85-89	1	384
65-69			90-94		
70-74			95-99		
75+	1	88	100+		
Total	3	737	Total	5	1,373

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2015 valuation can be found in the system-wide actuarial valuation report.

Actuarial Methods and Valuation Procedures

A brief summary of the methods used in this valuation is shown below:

<i>Actuarial cost method</i>	Entry Age Normal.
<i>Amortization Method</i>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. Gains and losses between subsequent odd-year valuations will be amortized as a level percentage of projected combined valuation payroll over a closed 20 year period.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.</p>

Economic Assumptions

A brief summary of the key economic assumptions used in this valuation is shown below:

<i>Net investment return</i>	7.50% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.50% compounded annually on members' regular account balances.</p> <p>7.50% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 6.3% in 2016 to 4.4% in 2094.
<i>Administrative Expenses</i>	<p>\$5.5 million added to OPSRP normal cost.</p> <p>\$33.0 million added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2014 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

There were no changes in actuarial methods and allocation procedures since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA actuarial methods and allocation procedures is provided as part of the system-wide valuation report.

Changes in Assumptions

There were no changes in assumptions since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA assumptions is provided as part of the system-wide valuation report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Glossary

Actuarial Accrued Liability

The portion of the present value of prospective benefits allocated to service and compensation before the valuation date in accordance with the actuarial cost method.

Actuarial Asset Value

The value of assets used in calculating the required contributions. The actuarial asset value may be equal to the fair market value of assets, or it may spread the recognition of certain investment gains or losses over a period of years in accordance with an asset valuation method.

Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disablement and retirement; rates of investment earnings and other relevant items.

Actuarial Cost Method

Sometimes called “funding method,” a particular technique used by actuaries to establish the amount and incidence of the annual actuarial cost of pension plan benefits, or normal cost, and the related unfunded actuarial accrued liability. Ordinarily, the annual contribution to the plan comprises the normal cost and an amount for amortization of the unfunded actuarial accrued liability.

Actuarial Gain or (Loss)

A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions, during the period between two actuarial valuation dates, as determined in accordance with a particular actuarial cost method.

Combined Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for both Tier 1/Tier 2 and OPSRP active members. This payroll is used to calculate UAL rates.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

Employer Contribution Rate

Consists of the normal cost rate and the UAL rates, plus adjustments for other items such as side account rate offsets.

Funded Status

The actuarial value of assets expressed as a percentage of the actuarial accrued liability.

Normal Cost

The annual cost allocated to the current year, under the actuarial cost method in use. The normal cost divided by the applicable payroll is the normal cost rate.

OPSRP Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for OPSRP active members. This payroll is used to calculate OPSRP normal cost rates.

Glossary

Pre-SLGRP Liability

The sum of Pre-SLGRP Pooled Liabilities and Transition Liabilities.

Pre-SLGRP Pooled Liability

The difference between the total UAL and the UAL attributable to the SLGRP for a pool of employers that joined the SLGRP. There are currently two pre-SLGRP pools. One was created for State Agencies and Community Colleges when the SLGRP was formed. The other one was created when the Local Government Rate Pool joined the SLGRP.

Present Value

Sometimes called “actuarial present value,” the estimated cost (as of the valuation date) of a series of future payments. The present value is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Rate Collar

A methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution rate and funded status.

Required Supplementary Information (RSI)

Schedules, statistical data, and other information that are an essential part of financial reporting and should be presented with, but are not part of, the basic financial statements of a governmental entity.

Statement No. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions.

Statement No. 68 of the Governmental Accounting Standards Board (GASB 68)

The accounting standard governing a state or local governmental employer’s accounting for pensions for fiscal years beginning after June 15, 2014.

Statement No. 75 of the Governmental Accounting Standards Board (GASB 75)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

The difference between the total UAL and the UAL attributable to the SLGRP for an individual employer that joined the SLGRP or the Local Government Rate Pool.

Unfunded Accrued Liability (UAL)

The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. The UAL is divided by combined valuation payroll and an amortization factor to determine an initial pre-collar UAL rate. The final UAL rate can be adjusted by the rate collar.



Milliman
111 SW Fifth Avenue, Suite 3700
Portland, OR 97204-3654
503 227 0634

This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

September 2016

City of Beaverton/2106
Oregon Public Employees Retirement System

Dear Sir or Madam:

As part of our engagement with the Oregon Public Employees Retirement Board, we performed a system-wide actuarial valuation of the Oregon Public Employees Retirement System (“PERS” or “the System”) as of December 31, 2015. The attached report, which is an informational supplement to the system-wide report, provides you with employer-specific contribution rates that will become effective July 1, 2017. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information will be provided separately by PERS and is not included in this report.

This report reflects the System's benefit provisions in effect as of December 31, 2015. The full development of the valuation results for the OPSRP and Retiree Health Insurance Account (RHIA) programs can be found in the separate system-wide actuarial valuation report. Costs of the IAP (Individual Account Program) are not included in this or the system-wide actuarial valuation report. Further, costs of pension obligation bond payments are not included in this or the system-wide actuarial valuation report.

If you have any questions about this report, please contact Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, OPSRP general service, and OPSRP police and fire payroll,
- Information to assist you in completing GASB 45 financial reporting requirements, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- Detailed development of Tier 1/Tier 2 valuation results,
- A brief summary of methods and assumptions, and
- A brief summary of any changes in System benefit provisions.

Additional information is provided in the system-wide actuarial valuation report, which is available at www.oregon.gov/PERS/Pages/section/financial_reports/financials.aspx.



September 2016
City of Beaverton/2106

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the System's staff. This information includes, but is not limited to, System benefit provisions as defined by statute, member census data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for the System have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer a reasonable estimate of anticipated experience affecting the System.

A valuation report is only an estimate of the System's financial condition as of a single date. It can neither predict the System's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of System benefits, only the timing of System contributions. While a valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: System experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the System's funded status); and changes in System benefit provisions or applicable law. Due to the limited scope of this assignment, we did not perform an analysis of the potential range of future measurements. The Board has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in September 2015.

Some of the actuarial computations presented in this report are for purposes of determining the contribution rates effective from July 2017 to June 2019 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.



September 2016
City of Beaverton/2106

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the System. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

Additional information is provided in the system-wide actuarial valuation report.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Larrabee".

Matt Larrabee, FSA, EA, MAAA
Principal and Consulting Actuary

A handwritten signature in black ink, appearing to read "Scott Preppernau".

Scott Preppernau, FSA, EA, MAAA
Principal and Consulting Actuary



ACTUARIAL VALUATION REPORT DECEMBER 31, 2015

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

INDEPENDENT EMPLOYERS

City of Beaverton -- #2106

September 2016

CONTENTS

- Executive Summary** **1**
- Employer Contribution Rates* 1
- Accounting Information* 3
- Principal Valuation Results* 5
- Employer 5
- Tier 1/Tier 2 6
- OPSRP 7
- Retiree Healthcare 7
- Side Account Information** **8**
- Tier 1/Tier 2 Valuation Results** **10**
- Assets* 10
- Liabilities* 11
- Unfunded Accrued Liability (UAL)* 13
- Contribution Rate Development* 15
- Data** **20**
- Brief Summary of Actuarial Methods and Assumptions** **22**
- Brief Summary of Changes in Plan Provisions** **24**
- Glossary** **25**

Executive Summary

Milliman has prepared this report for City of Beaverton to:

- Provide summary December 31, 2015 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2017 through June 30, 2019,
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2015, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45. GASB 68 information will be provided separately by PERS and is not included in this report.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2015 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to City of Beaverton.

Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2017 through June 30, 2019 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

Employer Rates Effective July 1, 2017 for City of Beaverton

	Payroll		
	Tier 1/Tier 2	OPSRP General Service	Police & Fire
Pension			
Normal cost rate	16.62%	8.02%	12.79%
Tier 1/Tier 2 UAL rate ¹	0.00%	0.00%	0.00%
OPSRP UAL rate	1.27%	1.27%	1.27%
Side account rate relief	0.00%	0.00%	0.00%
Net pension contribution rate	17.89%	9.29%	14.06%
Retiree Healthcare			
Normal cost rate	0.07%	0.00%	0.00%
UAL rate	0.43%	0.43%	0.43%
Net retiree healthcare rate	0.50%	0.43%	0.43%
Total net employer contribution rate	18.39%	9.72%	14.49%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate.

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 Biennium

The rate collar limits changes in contribution rates, but does not limit changes in rates for individual employers related to side accounts. The table below shows the possible minimum and maximum rates first effective as of July 1, 2019, which will depend on the funded status as of December 31, 2017. If the employer's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2015 is 72%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	16.62%	16.62%
Minimum 2019-2021 Rate	13.30%	9.98%
Maximum 2019-2021 Rate	19.94%	23.26%

Executive Summary

Accounting Information

Milliman is not an accounting or audit firm and cannot provide accounting advice. Milliman is not responsible for the interpretation of, or compliance with, accounting standards; citations to, and descriptions of accounting standards provided in this report are for reference purposes only. The information provided in this section is intended to assist the employer in completing its financial statements, but any accounting determination should be reviewed by your auditor.

Pension

In June 2012 the GASB issued Statement No. 68, which replaced GASB 27 and governs employer financial reporting for fiscal years beginning after June 15, 2014. The new standard replaced many of the key elements of the prior reporting requirements. Under the new rules, employers are required to record a balance sheet liability for their unfunded pension obligations. In addition, the timing and coordination of plan and employer reporting has changed under the new requirements. GASB 68 information for employers will be provided separately by PERS and is not included in this report.

Schedule of Funding Progress

Under GASB 27, the Schedule of Funding Progress for Tier 1/Tier 2 pension liabilities was reported in the Required Supplementary Information. This schedule is no longer required now that GASB 68 has replaced GASB 27. However, for additional information and the sake of historical comparison, the updated schedule is shown below for the last several valuations. For employers with side accounts, the actuarial value of assets in this Schedule includes the value of the employer's side accounts.

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (b - a)	Funded Ratio (a ÷ b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a) ÷ c)
12/31/2010	\$152,182,765	\$174,931,684	\$22,748,919	87%	\$32,532,597	70%
12/31/2011	146,862,259	181,185,933	34,323,674	81%	32,648,286	105%
12/31/2012	159,589,702	181,388,229	21,798,527	88%	34,468,039	63%
12/31/2013	174,455,205	191,831,494	17,376,289	91%	36,355,074	48%
12/31/2014	179,125,005	228,148,252	49,023,247	79%	36,862,844	133%
12/31/2015	172,778,254	240,245,999	67,467,745	72%	38,014,220	177%

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) is a cost-sharing pool under Statement No. 45 of the Governmental Accounting Standards Board (GASB 45). Consequently, each employer reports the contractually required contribution. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 was calculated as a part of this valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
	Tier 1 / Tier 2	OPSRP	
		General Service	Police & Fire
July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern employer financial reporting for retiree healthcare obligations for fiscal years beginning after June 15, 2017. In general, the changes required by GASB 75 parallel those that occurred for pension reporting when GASB 68 replaced GASB 27. Accounting information for reporting under GASB 75 will be provided separately and is not included in this report.

Executive Summary

Principal Valuation Results

A summary of principal valuation results from the current valuation and the prior valuation follows. Any changes in actuarial assumptions, methods or plan provisions between the two valuations are described later in this report. More detailed information can be found in the system-wide actuarial valuation report.

City of Beaverton

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
T1/T2 UAL	\$67,467,745	\$49,023,247
Allocated pooled OPSRP UAL	5,404,251	4,214,226
Side account	0	0
Net unfunded pension actuarial accrued liability	72,871,996	53,237,473
Combined valuation payroll	38,014,220	36,862,844
Net pension UAL as a percentage of payroll	192%	144%
Calculated side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	\$184,584	\$293,008

In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer’s combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.

Executive Summary

Principal Valuation Results (continued)

Tier 1/Tier 2

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
Normal cost	\$3,337,008	\$3,516,904
Tier 1/Tier 2 valuation payroll	20,081,698	20,616,681
Tier 1/Tier 2 pension normal cost rate	16.62%	17.06%
Tier 1/ Tier 2 Actuarial accrued liability	\$240,245,999	\$228,148,252
Actuarial asset value	172,778,254	179,125,005
Tier 1/Tier 2 Unfunded actuarial accrued liability	67,467,745	49,023,247
Tier 1/ Tier 2 Funded status	72%	79%
Combined valuation payroll	\$38,014,220	\$36,862,844
Tier 1/Tier 2 UAL as a percentage of payroll	177%	133%
Tier 1/Tier 2 UAL rate (includes Multnomah Fire District #10)	0.00%	(0.44%)
Tier 1/Tier 2 active members ¹	241	263
Tier 1/Tier 2 dormant members	126	138
Tier 1/Tier 2 retirees and beneficiaries	451	408

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
General service normal cost	\$342.2	\$301.3
OPSRP general service valuation payroll	4,266.9	3,720.4
General service normal cost rate	8.02%	8.10%
Police and fire normal cost	\$69.9	\$59.6
OPSRP police and fire valuation payroll	546.4	462.3
Police and fire normal cost rate	12.79%	12.90%
Actuarial accrued liability	\$3,742.5	\$3,064.1
Actuarial asset value	2,389.1	2,024.6
Unfunded actuarial accrued liability	1,353.5	1,039.5
Funded status	64%	66%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	14%	11%
UAL rate	1.27%	1.01%

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
RHIA		
Normal cost	\$3.3	\$3.5
Tier 1 / Tier 2 valuation payroll	4,730.8	4,933.1
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	\$465.6	\$468.4
Actuarial asset value	419.3	395.9
Unfunded actuarial accrued liability	46.3	72.5
Funded status	90%	85%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	0%	1%
UAL rate	0.43%	0.43%

Side Account Information

Reconciliation of Side Accounts

The following table reconciles the total side account from the beginning of the year to the end of the year. Side account transfers were calculated by PERS and made on a monthly basis. The amount of these transfers is shown in the table below.

All information in this table has been provided by PERS.

	New	Continuing	Total
1. Side account as of December 31, 2014	N/A		
2. Deposits made during 2015		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2015			
5. Side account earnings during 2015			
6. Side account as of December 31, 2015 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2015	December 31, 2014
Side account 1	\$0	\$0
Side account 2	0	0
Side account 3	0	0
Total	\$0	\$0

Development of Side Account Rate

The rate relief attributable to an employer's side account is determined by amortizing the side account balance on the valuation date over a fixed period, and expressing the result as a percentage of combined valuation payroll. For side accounts established prior to December 31, 2009, the fixed period ends December 31, 2027. For side accounts established at a later date, the fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2015	December 31, 2014
1. Total side account	\$0	\$0
2. Combined valuation payroll	38,014,220	36,862,844
3. Average Amortization factor	9.504	10.118
4. Total side account rate (-1. ÷ 2. ÷ 3.)¹	0.00%	0.00%

¹ For employers with more than one side account, the Total Side Account Rate is determined by calculating the rate on each side account separately and adding the rates together.

Tier 1/Tier 2 Valuation Results

Assets

A summary of the market value of pension assets, and reconciliation from the prior year are shown below.

Summary of Market Value of Tier 1/Tier 2 Pension Assets

	December 31, 2015	December 31, 2014
1. Member reserves	\$22,434,005	\$25,262,343
2. Employer reserves	83,290,568	86,095,031
3. Benefits in force reserve	67,053,681	67,767,632
4. Total market value of assets (1. + 2. + 3.)	\$172,778,254	\$179,125,005

The market value of member and employer reserves is provided by PERS. The benefits in force reserve provided by PERS is allocated each year among employers in proportion to their liabilities for retired members and beneficiaries.

Reconciliation of Tier 1/Tier 2 Pension Assets

	December 31, 2014 to December 31, 2015
1. Market value of assets at beginning of year	\$179,125,005
2. Regular employer contributions	2,361,606
3. Benefit payments and expense	(12,193,796)
4. Adjustments ¹	(777,963)
5. Interest credited	4,263,402
6. Total transferred from side accounts	0
7. Market value of assets at end of year (1. + 2. + 3. + 4. + 5. + 6.)	\$172,778,254

¹ Note the adjustment item above includes a reallocation of the benefits in force reserve, transfers to Multnomah Fire District #10, and other adjustments made by PERS.

Tier 1/Tier 2 Valuation Results

Liabilities

Normal Cost

The normal cost represents the value of benefits assigned to the next year of service by the actuarial cost method. If all actuarial assumptions are met, the normal cost represents the amount that would need to be contributed each year to fund plan benefits. Amounts shown below include assumed administrative expenses, which are allocated pro-rata based on normal cost.

Summary of Normal Cost by Tier/Member Classification

	December 31, 2015	December 31, 2014
Tier 1 Police & Fire	\$556,892	\$610,450
Tier 1 General Service	1,004,354	1,121,148
Tier 2 Police & Fire	842,438	796,930
Tier 2 General Service	933,324	988,376
Total	\$3,337,008	\$3,516,904

Change in Tier 1/Tier 2 Normal Cost

The following table shows the impact of the assumption, method, and plan changes on normal cost as of December 31, 2015.

	Before Changes	After Changes	Net Change
Normal Cost	\$3,337,008	\$3,337,008	\$0

Tier 1/Tier 2 Valuation Results

Liabilities

Actuarial Accrued Liability

The actuarial accrued liability represents the value of benefits allocated to service performed before the valuation date by the actuarial cost method. If all actuarial assumptions are met, the actuarial accrued liability represents the amount of assets that would need to be accumulated as of the valuation date to provide for the portion of benefits allocated to service already performed.

Summary of Actuarial Accrued Liability by Tier/Member Classification

	December 31, 2015	December 31, 2014
Active Members		
▪ Tier 1 Police & Fire	\$17,158,702	\$16,996,564
▪ Tier 1 General Service	30,052,921	33,177,460
▪ Tier 2 Police & Fire	14,640,770	12,554,575
▪ Tier 2 General Service	19,593,269	18,972,469
▪ Total Active Members	\$81,445,662	\$81,701,068
Dormant Members	14,018,600	14,979,658
Retired Members and Beneficiaries	144,781,737	131,467,526
Total Actuarial Accrued Liability	\$240,245,999	\$228,148,252

Change in Tier 1/Tier 2 Actuarial Accrued Liability

The following table shows the impact of the assumption, method, and plan changes on the actuarial accrued liability as of December 31, 2015.

	Before Changes	After Changes	Net Change
Actuarial Accrued Liability	\$240,245,999	\$240,245,999	\$0

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Summary of UAL

The UAL represents the difference between the assets accumulated and the liability attributed to prior years of service by the cost method.

	December 31, 2015	December 31, 2014
1. Actuarial accrued liability	\$240,245,999	\$228,148,252
2. Actuarial value of assets	172,778,254	179,125,005
3. Unfunded accrued liability (1. – 2.)	67,467,745	49,023,247
4. Funded percentage (2. ÷ 1.)	72%	79%
5. Combined valuation payroll	\$38,014,220	\$36,862,844
6. Unfunded accrued liability as % of combined valuation payroll (3. ÷ 5.)	177%	133%

Reconciliation of UAL Bases

Beginning with the December 31, 2013 actuarial valuation, each odd-year valuation establishes a 20-year closed-period amortization schedule for outstanding Tier 1/Tier 2 UAL amounts. Amortization schedules are calculated based on the total Tier 1/Tier 2 UAL as of that valuation date less the remaining unamortized balance of previously established Tier 1/Tier 2 UAL bases.

Amortization Base	UAL December 31, 2014	Payment	Interest	UAL December 31, 2015	Next Year's Payment
December 31, 2013	\$17,413,365	\$1,304,372	\$1,253,891	\$17,362,884	\$1,350,042
December 31, 2015	N/A	N/A	N/A	\$50,104,861	\$3,625,533
Total				\$67,467,745	\$4,975,575

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Actuarial Gain or Loss since Prior Valuation

The system-wide actuarial valuation report contains a detailed analysis of gains and losses since the last valuation. The table below shows the gain or loss for the individual employer.

1. Expected actuarial accrued liability	
a. Actuarial accrued liability at December 31, 2014	\$228,148,252
b. Normal cost at December 31, 2014 (excluding assumed expenses)	3,363,862
c. Benefit payments during 2015	(12,099,613)
d. Interest at 7.50% to December 31, 2015	16,783,528
e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)	236,196,029
f. Change in actuarial accrued liability due to assumption, method, and plan changes	0
g. Expected actuarial accrued liability at December 31, 2015 (e. + f.)	236,196,029
2. Actuarial accrued liability at December 31, 2015	240,245,999
3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)	(4,049,970)
4. Expected actuarial value of assets	
a. Actuarial value of assets at December 31, 2014	179,125,005
b. Contributions for 2015 ¹	2,361,606
c. Benefit payments and expenses during 2015	(12,193,796)
d. Interest at 7.50% to December 31, 2015	13,065,668
e. Expected actuarial value of assets at December 31, 2015 (a. + b. + c. + d.)	182,358,483
5. Actuarial value of assets at December 31, 2015	172,778,254
6. Gain/(loss) on actuarial value of assets (5. - 4.e.)	(9,580,229)
7. Total actuarial gain/(loss) (3. + 6.)	(\$13,630,199)

Unfunded Accrued Liability Reconciliation

A reconciliation of the Tier 1/Tier 2 UAL from December 31, 2014 is provided below.

1. UAL at December 31, 2014	\$49,023,247
2. Expected increase	4,814,299
3. Liability (gain)/loss	4,049,970
4. Asset (gain)/loss	9,580,229
5. Change due to changes in assumptions, methods, and plan provisions	0
6. UAL at December 31, 2015 (1. + 2. + 3. + 4. + 5.)	\$67,467,745

¹ Includes rate relief from side accounts.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Normal Cost Rate

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

Development of Tier 1/Tier 2 Normal Cost Rate

	December 31, 2015			December 31, 2014		
	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate
Tier 1 Police & Fire	\$556,892	\$2,630,057	21.17%	\$610,450	\$2,837,728	21.51%
Tier 1 General Service	1,004,354	5,741,233	17.49%	1,121,148	5,997,436	18.69%
Tier 2 Police & Fire	842,438	4,494,038	18.75%	796,930	4,241,676	18.79%
Tier 2 General Service	933,324	7,216,370	12.93%	988,376	7,539,841	13.11%
Total	\$3,337,008	\$20,081,698	16.62%	\$3,516,904	\$20,616,681	17.06%

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Development of Tier 1/Tier 2 UAL Rates

The UAL rate is determined by calculating the next year's scheduled payment to the UAL as a percentage of combined valuation payroll.

	December 31, 2015	December 31, 2014
1. Total Tier 1/Tier 2 UAL	\$67,467,745	\$49,023,247
2. Next year's Tier 1/Tier 2 UAL payment	4,975,575	3,591,628
3. Combined valuation payroll	38,014,220	36,862,844
4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)	13.09%	9.74%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	16.62%	17.06%
b. Tier 1/Tier 2 UAL rate	13.09%	9.74%
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate (a. + b. + c.)	29.86%	26.95%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Adjustments Due to Rate Collar and Minimum Rate Requirements

Employer contribution rates are generally limited to change by no more than the greater of 3 percent of payroll or 20 percent from the current contribution rate. However, if the funded percentage excluding side accounts is below 60 percent or above 140 percent the rate collar doubles in size. If the funded percentage excluding side accounts is between 60 and 70 percent or 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

The table below shows the current contribution rate for the period from July 1, 2015 through June 30, 2017, develops the maximum and minimum contribution rates effective July 1, 2017 based on the collar, and calculates the net adjustment due to the collar and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

1. Current net Tier 1/Tier 2 pension contribution rate		13.62%
2. Employer contribution rate attributable to side accounts		0.00%
3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)		13.62%
4. Size of rate collar		
a. 20% of current employer contribution rate (20% x 3.)		2.72%
b. Preliminary size of rate collar (maximum of 3% or a.)		3.00%
c. Funded percentage		72%
d. Size of rate collar (If c. < 60% or c. > 140%, 2 x b. If c. is 70%-130%, b. Otherwise, a graded rate between b. and 2 x b.)		3.00%
5. July 1, 2017 minimum employer contribution rate	(3. – 4.d. but not < 0%)	10.62%
6. July 1, 2017 maximum employer contribution rate	(3. + 4.d.)	16.62%
7. July 1, 2017 total pension rate, before adjustment		29.86%
8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)		(13.24%)
9. July 1, 2017 Tier 1/Tier 2 UAL rate, before collar		13.09%
10. July 1, 2017 Tier 1/Tier 2 UAL rate, after collar	(8. + 9.)	(0.15%)
11. July 1, 2017 Tier 1/Tier 2 pension rate, after collar		16.62%
12. Tier 1/Tier 2 retiree healthcare rate		0.50%
13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)		0.00%
14. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment		16.62%
15. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)		16.62%
16. July 1, 2017 Tier 1/Tier 2 pension rate, after minimum adjustment	(11. + 13.)	16.62%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Post-Rate Collar)

The table below summarizes the employer's pension contribution rate for Tier 1 /Tier 2 after adjustments for the rate collar and the 6 percent of payroll minimum employer contribution rate.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	16.62%	17.06%
b. Tier 1/Tier 2 UAL rate	(0.15%)	(0.59%)
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate <i>(a. + b. + c., minimum of 5.50%)</i>	16.62%	16.62%

Data

Demographic Information

Employer Valuation Payroll

	General Service	Police & Fire	Total
Tier 1	\$5,741,233	\$2,630,057	\$8,371,290
Tier 2	7,216,370	4,494,038	11,710,408
Tier 1/Tier 2 valuation payroll	12,957,603	7,124,095	20,081,698
OPSRP valuation payroll	11,719,974	6,212,548	17,932,522
Combined valuation payroll	\$24,677,577	\$13,336,643	\$38,014,220

Employer Member Census

	December 31							
	2015				2014			
	Tier 1	Tier 2	OPSRP	Total	Tier 1	Tier 2	OPSRP	Total
Active Members ¹								
General Service	72	103	211	386	81	111	190	382
Police & Fire	23	43	69	135	27	44	67	138
Total	95	146	280	521	108	155	257	520
Active Members with previous service segments with the employer								
General Service	58	49	N/A	107	64	51	N/A	115
Police & Fire	8	9	N/A	17	9	6	N/A	15
Total	66	58	N/A	124	73	57	N/A	130
Dormant Members								
General Service	51	54	29	134	61	54	23	138
Police & Fire	15	6	4	25	14	9	4	27
Total	66	60	33	159	75	63	27	165
Retired Members and Beneficiaries								
General Service	274	53	6	333	258	34	4	296
Police & Fire	117	7	0	124	115	1	0	116
Total	391	60	6	457	373	35	4	412
Grand Total Number of Members	618	324	319	1,261	629	310	288	1,227

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Data

Demographic Information (continued)

Employer Tier 1/Tier 2 Active Members as of December 31, 2015

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
<20										
20-24										
25-29										
30-34		1	2							3
35-39		2	12	7						21
40-44		1	11	19	3					34
45-49			9	21	12	7				49
50-54		2	11	15	11	10	3			52
55-59		1	10	14	6	4	2			37
60-64			8	10	7	4	3			32
65-69			3	4	3	2				12
70-74				1						1
75+										
Total	0	7	66	91	42	27	8	0	0	241

Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2015

Dormant Members			Retired Members and Beneficiaries		
Age	Count	Average Deferred Monthly Benefit	Age	Count	Average Monthly Benefit
<20			<45	2	1,166
20-24			45-49		
25-29			50-54	9	2,291
30-34			55-59	51	2,585
35-39	5	516	60-64	94	2,723
40-44	14	748	65-69	111	2,049
45-49	26	719	70-74	96	1,695
50-54	24	1,380	75-79	47	1,567
55-59	28	1,404	80-84	22	1,295
60-64	21	677	85-89	13	1,160
65-69	6	134	90-94	4	721
70-74	1	272	95-99	2	219
75+	1	886	100+		
Total	126	955	Total	451	2,043

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2015 valuation can be found in the system-wide actuarial valuation report.

Actuarial Methods and Valuation Procedures

A brief summary of the methods used in this valuation is shown below:

<i>Actuarial cost method</i>	Entry Age Normal.
<i>Amortization Method</i>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. Gains and losses between subsequent odd-year valuations will be amortized as a level percentage of projected combined valuation payroll over a closed 20 year period.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.</p>

Economic Assumptions

A brief summary of the key economic assumptions used in this valuation is shown below:

<i>Net investment return</i>	7.50% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.50% compounded annually on members' regular account balances.</p> <p>7.50% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 6.3% in 2016 to 4.4% in 2094.
<i>Administrative Expenses</i>	<p>\$5.5 million added to OPSRP normal cost.</p> <p>\$33.0 million added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2014 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

There were no changes in actuarial methods and allocation procedures since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA actuarial methods and allocation procedures is provided as part of the system-wide valuation report.

Changes in Assumptions

There were no changes in assumptions since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA assumptions is provided as part of the system-wide valuation report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Glossary

Actuarial Accrued Liability

The portion of the present value of prospective benefits allocated to service and compensation before the valuation date in accordance with the actuarial cost method.

Actuarial Asset Value

The value of assets used in calculating the required contributions. The actuarial asset value may be equal to the fair market value of assets, or it may spread the recognition of certain investment gains or losses over a period of years in accordance with an asset valuation method.

Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disablement and retirement; rates of investment earnings and other relevant items.

Actuarial Cost Method

Sometimes called “funding method,” a particular technique used by actuaries to establish the amount and incidence of the annual actuarial cost of pension plan benefits, or normal cost, and the related unfunded actuarial accrued liability. Ordinarily, the annual contribution to the plan comprises the normal cost and an amount for amortization of the unfunded actuarial accrued liability.

Actuarial Gain or (Loss)

A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions, during the period between two actuarial valuation dates, as determined in accordance with a particular actuarial cost method.

Combined Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for both Tier 1/Tier 2 and OPSRP active members. This payroll is used to calculate UAL rates.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

Employer Contribution Rate

Consists of the normal cost rate and the UAL rates, plus adjustments for other items such as side account rate offsets.

Funded Status

The actuarial value of assets expressed as a percentage of the actuarial accrued liability.

Normal Cost

The annual cost allocated to the current year, under the actuarial cost method in use. The normal cost divided by the applicable payroll is the normal cost rate.

OPSRP Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for OPSRP active members. This payroll is used to calculate OPSRP normal cost rates.

Glossary

Pre-SLGRP Liability

The sum of Pre-SLGRP Pooled Liabilities and Transition Liabilities.

Pre-SLGRP Pooled Liability

The difference between the total UAL and the UAL attributable to the SLGRP for a pool of employers that joined the SLGRP. There are currently two pre-SLGRP pools. One was created for State Agencies and Community Colleges when the SLGRP was formed. The other one was created when the Local Government Rate Pool joined the SLGRP.

Present Value

Sometimes called “actuarial present value,” the estimated cost (as of the valuation date) of a series of future payments. The present value is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Rate Collar

A methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution rate and funded status.

Required Supplementary Information (RSI)

Schedules, statistical data, and other information that are an essential part of financial reporting and should be presented with, but are not part of, the basic financial statements of a governmental entity.

Statement No. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions.

Statement No. 68 of the Governmental Accounting Standards Board (GASB 68)

The accounting standard governing a state or local governmental employer’s accounting for pensions for fiscal years beginning after June 15, 2014.

Statement No. 75 of the Governmental Accounting Standards Board (GASB 75)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

The difference between the total UAL and the UAL attributable to the SLGRP for an individual employer that joined the SLGRP or the Local Government Rate Pool.

Unfunded Accrued Liability (UAL)

The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. The UAL is divided by combined valuation payroll and an amortization factor to determine an initial pre-collar UAL rate. The final UAL rate can be adjusted by the rate collar.



Milliman
111 SW Fifth Avenue, Suite 3700
Portland, OR 97204-3654
503 227 0634

This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

September 2016

City of Bend/2107
Oregon Public Employees Retirement System

Dear Sir or Madam:

As part of our engagement with the Oregon Public Employees Retirement Board, we performed a system-wide actuarial valuation of the Oregon Public Employees Retirement System (“PERS” or “the System”) as of December 31, 2015. The attached report, which is an informational supplement to the system-wide report, provides you with employer-specific contribution rates that will become effective July 1, 2017. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information will be provided separately by PERS and is not included in this report.

This report reflects the System's benefit provisions in effect as of December 31, 2015. The full development of the valuation results for the OPSRP and Retiree Health Insurance Account (RHIA) programs can be found in the separate system-wide actuarial valuation report. Costs of the IAP (Individual Account Program) are not included in this or the system-wide actuarial valuation report. Further, costs of pension obligation bond payments are not included in this or the system-wide actuarial valuation report.

If you have any questions about this report, please contact Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, OPSRP general service, and OPSRP police and fire payroll,
- Information to assist you in completing GASB 45 financial reporting requirements, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- Detailed development of Tier 1/Tier 2 valuation results,
- A brief summary of methods and assumptions, and
- A brief summary of any changes in System benefit provisions.

Additional information is provided in the system-wide actuarial valuation report, which is available at www.oregon.gov/PERS/Pages/section/financial_reports/financials.aspx.



September 2016
City of Bend/2107

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the System's staff. This information includes, but is not limited to, System benefit provisions as defined by statute, member census data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for the System have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer a reasonable estimate of anticipated experience affecting the System.

A valuation report is only an estimate of the System's financial condition as of a single date. It can neither predict the System's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of System benefits, only the timing of System contributions. While a valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: System experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the System's funded status); and changes in System benefit provisions or applicable law. Due to the limited scope of this assignment, we did not perform an analysis of the potential range of future measurements. The Board has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in September 2015.

Some of the actuarial computations presented in this report are for purposes of determining the contribution rates effective from July 2017 to June 2019 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.



September 2016
City of Bend/2107

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the System. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

Additional information is provided in the system-wide actuarial valuation report.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Larrabee".

Matt Larrabee, FSA, EA, MAAA
Principal and Consulting Actuary

A handwritten signature in black ink, appearing to read "Scott Preppernau".

Scott Preppernau, FSA, EA, MAAA
Principal and Consulting Actuary



ACTUARIAL VALUATION REPORT DECEMBER 31, 2015

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

INDEPENDENT EMPLOYERS

City of Bend -- #2107

September 2016

CONTENTS

Executive Summary **1**

Employer Contribution Rates 1

Accounting Information 3

Principal Valuation Results 5

 ▪ Employer 5

 ▪ Tier 1/Tier 2 6

 ▪ OPSRP 7

 ▪ Retiree Healthcare 7

Side Account Information **8**

Tier 1/Tier 2 Valuation Results **10**

Assets 10

Liabilities 11

Unfunded Accrued Liability (UAL) 13

Contribution Rate Development 15

Data **20**

Brief Summary of Actuarial Methods and Assumptions **22**

Brief Summary of Changes in Plan Provisions **24**

Glossary **25**

Executive Summary

Milliman has prepared this report for City of Bend to:

- Provide summary December 31, 2015 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2017 through June 30, 2019,
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2015, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45. GASB 68 information will be provided separately by PERS and is not included in this report.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2015 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to City of Bend.

Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2017 through June 30, 2019 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

Employer Rates Effective July 1, 2017 for City of Bend

	Payroll		
	Tier 1/Tier 2	OPSRP General Service	OPSRP Police & Fire
Pension			
Normal cost rate	16.55%	8.02%	12.79%
Tier 1/Tier 2 UAL rate ¹	5.27%	5.27%	5.27%
OPSRP UAL rate	1.27%	1.27%	1.27%
Side account rate relief	(2.86%)	(2.86%)	(2.86%)
Net pension contribution rate	20.23%	11.70%	16.47%
Retiree Healthcare			
Normal cost rate	0.07%	0.00%	0.00%
UAL rate	0.43%	0.43%	0.43%
Net retiree healthcare rate	0.50%	0.43%	0.43%
Total net employer contribution rate	20.73%	12.13%	16.90%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate.

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 Biennium

The rate collar limits changes in contribution rates, but does not limit changes in rates for individual employers related to side accounts. The table below shows the possible minimum and maximum rates first effective as of July 1, 2019, which will depend on the funded status as of December 31, 2017. If the employer's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2015 is 70%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	21.82%	21.82%
Minimum 2019-2021 Rate	17.46%	13.10%
Maximum 2019-2021 Rate	26.18%	30.54%

Executive Summary

Accounting Information

Milliman is not an accounting or audit firm and cannot provide accounting advice. Milliman is not responsible for the interpretation of, or compliance with, accounting standards; citations to, and descriptions of accounting standards provided in this report are for reference purposes only. The information provided in this section is intended to assist the employer in completing its financial statements, but any accounting determination should be reviewed by your auditor.

Pension

In June 2012 the GASB issued Statement No. 68, which replaced GASB 27 and governs employer financial reporting for fiscal years beginning after June 15, 2014. The new standard replaced many of the key elements of the prior reporting requirements. Under the new rules, employers are required to record a balance sheet liability for their unfunded pension obligations. In addition, the timing and coordination of plan and employer reporting has changed under the new requirements. GASB 68 information for employers will be provided separately by PERS and is not included in this report.

Schedule of Funding Progress

Under GASB 27, the Schedule of Funding Progress for Tier 1/Tier 2 pension liabilities was reported in the Required Supplementary Information. This schedule is no longer required now that GASB 68 has replaced GASB 27. However, for additional information and the sake of historical comparison, the updated schedule is shown below for the last several valuations. For employers with side accounts, the actuarial value of assets in this Schedule includes the value of the employer's side accounts.

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (b - a)	Funded Ratio (a ÷ b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a) ÷ c)
12/31/2010	\$116,318,438	\$128,704,772	\$12,386,334	90%	\$31,485,779	39%
12/31/2011	113,904,241	132,422,315	18,518,073	86%	31,464,101	59%
12/31/2012	126,057,712	137,537,729	11,480,017	92%	32,558,682	35%
12/31/2013	139,836,995	144,653,986	4,816,991	97%	33,233,981	14%
12/31/2014	145,924,722	175,293,189	29,368,467	83%	36,868,563	80%
12/31/2015	142,207,014	187,768,848	45,561,834	76%	41,835,451	109%

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) is a cost-sharing pool under Statement No. 45 of the Governmental Accounting Standards Board (GASB 45). Consequently, each employer reports the contractually required contribution. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 was calculated as a part of this valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
	Tier 1 / Tier 2	OPSRP	
		General Service	Police & Fire
July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern employer financial reporting for retiree healthcare obligations for fiscal years beginning after June 15, 2017. In general, the changes required by GASB 75 parallel those that occurred for pension reporting when GASB 68 replaced GASB 27. Accounting information for reporting under GASB 75 will be provided separately and is not included in this report.

Executive Summary

Principal Valuation Results

A summary of principal valuation results from the current valuation and the prior valuation follows. Any changes in actuarial assumptions, methods or plan provisions between the two valuations are described later in this report. More detailed information can be found in the system-wide actuarial valuation report.

City of Bend

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
T1/T2 UAL	\$56,921,816	\$41,801,691
Allocated pooled OPSRP UAL	5,947,493	4,214,879
Side account	11,359,982	12,433,224
Net unfunded pension actuarial accrued liability	51,509,327	33,583,346
Combined valuation payroll	41,835,451	36,868,563
Net pension UAL as a percentage of payroll	123%	91%
Calculated side account rate relief	(2.86%)	(3.33%)
Allocated pooled RHIA UAL	\$203,139	\$293,053

In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer’s combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.

Executive Summary

Principal Valuation Results (continued)

Tier 1/Tier 2

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
Normal cost	\$3,358,432	\$3,576,407
Tier 1/Tier 2 valuation payroll	20,288,321	20,963,895
Tier 1/Tier 2 pension normal cost rate	16.55%	17.06%
Tier 1/ Tier 2 Actuarial accrued liability	\$187,768,848	\$175,293,189
Actuarial asset value	130,847,032	133,491,498
Tier 1/Tier 2 Unfunded actuarial accrued liability	56,921,816	41,801,691
Tier 1/ Tier 2 Funded status	70%	76%
Combined valuation payroll	\$41,835,451	\$36,868,563
Tier 1/Tier 2 UAL as a percentage of payroll	136%	113%
Tier 1/Tier 2 UAL rate (includes Multnomah Fire District #10)	5.27%	4.76%
Tier 1/Tier 2 active members ¹	215	238
Tier 1/Tier 2 dormant members	72	71
Tier 1/Tier 2 retirees and beneficiaries	276	261

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
General service normal cost	\$342.2	\$301.3
OPSRP general service valuation payroll	4,266.9	3,720.4
General service normal cost rate	8.02%	8.10%
Police and fire normal cost	\$69.9	\$59.6
OPSRP police and fire valuation payroll	546.4	462.3
Police and fire normal cost rate	12.79%	12.90%
Actuarial accrued liability	\$3,742.5	\$3,064.1
Actuarial asset value	2,389.1	2,024.6
Unfunded actuarial accrued liability	1,353.5	1,039.5
Funded status	64%	66%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	14%	11%
UAL rate	1.27%	1.01%

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
RHIA		
Normal cost	\$3.3	\$3.5
Tier 1 / Tier 2 valuation payroll	4,730.8	4,933.1
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	\$465.6	\$468.4
Actuarial asset value	419.3	395.9
Unfunded actuarial accrued liability	46.3	72.5
Funded status	90%	85%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	0%	1%
UAL rate	0.43%	0.43%

Side Account Information

Reconciliation of Side Accounts

The following table reconciles the total side account from the beginning of the year to the end of the year. Side account transfers were calculated by PERS and made on a monthly basis. The amount of these transfers is shown in the table below.

All information in this table has been provided by PERS.

	New	Continuing	Total
1. Side account as of December 31, 2014	N/A	\$12,433,224	\$12,433,224
2. Deposits made during 2015		N/A	
3. Administrative expenses		(1,000)	(1,000)
4. Amount transferred to employer reserves during 2015		(1,332,721)	(1,332,721)
5. Side account earnings during 2015		260,478	260,478
6. Side account as of December 31, 2015 (1. + 2. + 3. + 4. + 5.)		\$11,359,982	\$11,359,982

Side Account Information

Side Account Balances

	December 31, 2015	December 31, 2014
Side account 1	\$11,359,982	\$12,433,224
Side account 2	0	0
Side account 3	0	0
Total	\$11,359,982	\$12,433,224

Development of Side Account Rate

The rate relief attributable to an employer's side account is determined by amortizing the side account balance on the valuation date over a fixed period, and expressing the result as a percentage of combined valuation payroll. For side accounts established prior to December 31, 2009, the fixed period ends December 31, 2027. For side accounts established at a later date, the fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2015	December 31, 2014
1. Total side account	\$11,359,982	\$12,433,224
2. Combined valuation payroll	41,835,451	36,868,563
3. Average Amortization factor	9.504	10.118
4. Total side account rate (-1. ÷ 2. ÷ 3.)¹	(2.86%)	(3.33%)

¹ For employers with more than one side account, the Total Side Account Rate is determined by calculating the rate on each side account separately and adding the rates together.

Tier 1/Tier 2 Valuation Results

Assets

A summary of the market value of pension assets, and reconciliation from the prior year are shown below.

Summary of Market Value of Tier 1/Tier 2 Pension Assets

	December 31, 2015	December 31, 2014
1. Member reserves	\$14,034,576	\$16,725,627
2. Employer reserves	68,408,419	70,296,734
3. Benefits in force reserve	48,404,037	46,469,137
4. Total market value of assets (1. + 2. + 3.)	\$130,847,032	\$133,491,498

The market value of member and employer reserves is provided by PERS. The benefits in force reserve provided by PERS is allocated each year among employers in proportion to their liabilities for retired members and beneficiaries.

Reconciliation of Tier 1/Tier 2 Pension Assets

	December 31, 2014 to December 31, 2015
1. Market value of assets at beginning of year	\$133,491,498
2. Regular employer contributions	2,753,489
3. Benefit payments and expense	(8,802,335)
4. Adjustments ¹	(991,557)
5. Interest credited	3,063,217
6. Total transferred from side accounts	1,332,721
7. Market value of assets at end of year (1. + 2. + 3. + 4. + 5. + 6.)	\$130,847,032

¹ Note the adjustment item above includes a reallocation of the benefits in force reserve, transfers to Multnomah Fire District #10, and other adjustments made by PERS.

Tier 1/Tier 2 Valuation Results

Liabilities

Normal Cost

The normal cost represents the value of benefits assigned to the next year of service by the actuarial cost method. If all actuarial assumptions are met, the normal cost represents the amount that would need to be contributed each year to fund plan benefits. Amounts shown below include assumed administrative expenses, which are allocated pro-rata based on normal cost.

Summary of Normal Cost by Tier/Member Classification

	December 31, 2015	December 31, 2014
Tier 1 Police & Fire	\$935,955	\$1,081,925
Tier 1 General Service	492,521	556,841
Tier 2 Police & Fire	1,207,759	1,172,057
Tier 2 General Service	722,197	765,584
Total	\$3,358,432	\$3,576,407

Change in Tier 1/Tier 2 Normal Cost

The following table shows the impact of the assumption, method, and plan changes on normal cost as of December 31, 2015.

	Before Changes	After Changes	Net Change
Normal Cost	\$3,358,432	\$3,358,432	\$0

Tier 1/Tier 2 Valuation Results

Liabilities

Actuarial Accrued Liability

The actuarial accrued liability represents the value of benefits allocated to service performed before the valuation date by the actuarial cost method. If all actuarial assumptions are met, the actuarial accrued liability represents the amount of assets that would need to be accumulated as of the valuation date to provide for the portion of benefits allocated to service already performed.

Summary of Actuarial Accrued Liability by Tier/Member Classification

	December 31, 2015	December 31, 2014
Active Members		
▪ Tier 1 Police & Fire	\$28,277,343	\$30,701,273
▪ Tier 1 General Service	11,446,826	12,280,680
▪ Tier 2 Police & Fire	18,655,499	16,060,269
▪ Tier 2 General Service	13,617,437	13,225,086
▪ Total Active Members	\$71,997,105	\$72,267,308
Dormant Members	11,258,158	12,876,907
Retired Members and Beneficiaries	104,513,585	90,148,974
Total Actuarial Accrued Liability	\$187,768,848	\$175,293,189

Change in Tier 1/Tier 2 Actuarial Accrued Liability

The following table shows the impact of the assumption, method, and plan changes on the actuarial accrued liability as of December 31, 2015.

	Before Changes	After Changes	Net Change
Actuarial Accrued Liability	\$187,768,848	\$187,768,848	\$0

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Summary of UAL

The UAL represents the difference between the assets accumulated and the liability attributed to prior years of service by the cost method.

	December 31, 2015	December 31, 2014
1. Actuarial accrued liability	\$187,768,848	\$175,293,189
2. Actuarial value of assets	130,847,032	133,491,498
3. Unfunded accrued liability (1. – 2.)	56,921,816	41,801,691
4. Funded percentage (2. ÷ 1.)	70%	76%
5. Combined valuation payroll	\$41,835,451	\$36,868,563
6. Unfunded accrued liability as % of combined valuation payroll (3. ÷ 5.)	136%	113%

Reconciliation of UAL Bases

Beginning with the December 31, 2013 actuarial valuation, each odd-year valuation establishes a 20-year closed-period amortization schedule for outstanding Tier 1/Tier 2 UAL amounts. Amortization schedules are calculated based on the total Tier 1/Tier 2 UAL as of that valuation date less the remaining unamortized balance of previously established Tier 1/Tier 2 UAL bases.

Amortization Base	UAL		Interest	UAL	
	December 31, 2014	Payment		December 31, 2015	Next Year's Payment
December 31, 2013	\$17,438,390	\$1,306,246	\$1,255,693	\$17,387,837	\$1,351,982
December 31, 2015	N/A	N/A	N/A	\$39,533,979	\$2,860,635
Total				\$56,921,816	\$4,212,617

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Actuarial Gain or Loss since Prior Valuation

The system-wide actuarial valuation report contains a detailed analysis of gains and losses since the last valuation. The table below shows the gain or loss for the individual employer.

1. Expected actuarial accrued liability	
a. Actuarial accrued liability at December 31, 2014	\$175,293,189
b. Normal cost at December 31, 2014 (excluding assumed expenses)	3,421,035
c. Benefit payments during 2015	(8,734,347)
d. Interest at 7.50% to December 31, 2015	12,947,740
e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)	182,927,617
f. Change in actuarial accrued liability due to assumption, method, and plan changes	0
g. Expected actuarial accrued liability at December 31, 2015 (e. + f.)	182,927,617
2. Actuarial accrued liability at December 31, 2015	187,768,848
3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)	(4,841,231)
4. Expected actuarial value of assets	
a. Actuarial value of assets at December 31, 2014	133,491,498
b. Contributions for 2015 ¹	4,086,210
c. Benefit payments and expenses during 2015	(8,802,335)
d. Interest at 7.50% to December 31, 2015	9,835,008
e. Expected actuarial value of assets at December 31, 2015 (a. + b. + c. + d.)	138,610,380
5. Actuarial value of assets at December 31, 2015	130,847,032
6. Gain/(loss) on actuarial value of assets (5. - 4.e.)	(7,763,348)
7. Total actuarial gain/(loss) (3. + 6.)	(\$12,604,579)

Unfunded Accrued Liability Reconciliation

A reconciliation of the Tier 1/Tier 2 UAL from December 31, 2014 is provided below.

1. UAL at December 31, 2014	\$41,801,691
2. Expected increase	2,515,546
3. Liability (gain)/loss	4,841,231
4. Asset (gain)/loss	7,763,348
5. Change due to changes in assumptions, methods, and plan provisions	0
6. UAL at December 31, 2015 (1. + 2. + 3. + 4. + 5.)	\$56,921,816

¹ Includes rate relief from side accounts.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Normal Cost Rate

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

Development of Tier 1/Tier 2 Normal Cost Rate

	December 31, 2015			December 31, 2014		
	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate
Tier 1 Police & Fire	\$935,955	\$4,402,095	21.26%	\$1,081,925	\$4,922,936	21.98%
Tier 1 General Service	492,521	3,208,635	15.35%	556,841	3,438,033	16.20%
Tier 2 Police & Fire	1,207,759	6,589,834	18.33%	1,172,057	6,338,317	18.49%
Tier 2 General Service	722,197	6,087,757	11.86%	765,584	6,264,609	12.22%
Total	\$3,358,432	\$20,288,321	16.55%	\$3,576,407	\$20,963,895	17.06%

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Development of Tier 1/Tier 2 UAL Rates

The UAL rate is determined by calculating the next year's scheduled payment to the UAL as a percentage of combined valuation payroll.

	December 31, 2015	December 31, 2014
1. Total Tier 1/Tier 2 UAL	\$56,921,816	\$41,801,691
2. Next year's Tier 1/Tier 2 UAL payment	4,212,617	3,069,148
3. Combined valuation payroll	41,835,451	36,868,563
4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)	10.07%	8.32%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	16.55%	17.06%
b. Tier 1/Tier 2 UAL rate	10.07%	8.32%
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate (a. + b. + c.)	26.77%	25.53%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Adjustments Due to Rate Collar and Minimum Rate Requirements

Employer contribution rates are generally limited to change by no more than the greater of 3 percent of payroll or 20 percent from the current contribution rate. However, if the funded percentage excluding side accounts is below 60 percent or above 140 percent the rate collar doubles in size. If the funded percentage excluding side accounts is between 60 and 70 percent or 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

The table below shows the current contribution rate for the period from July 1, 2015 through June 30, 2017, develops the maximum and minimum contribution rates effective July 1, 2017 based on the collar, and calculates the net adjustment due to the collar and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

1. Current net Tier 1/Tier 2 pension contribution rate		14.64%
2. Employer contribution rate attributable to side accounts		(3.54%)
3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)		18.18%
4. Size of rate collar		
a. 20% of current employer contribution rate (20% x 3.)		3.64%
b. Preliminary size of rate collar (maximum of 3% or a.)		3.64%
c. Funded percentage		70%
d. Size of rate collar (If c. < 60% or c. > 140%, 2 x b. If c. is 70%-130%, b. Otherwise, a graded rate between b. and 2 x b.)		3.64%
5. July 1, 2017 minimum employer contribution rate	(3. – 4.d. but not < 0%)	14.54%
6. July 1, 2017 maximum employer contribution rate	(3. + 4.d.)	21.82%
7. July 1, 2017 total pension rate, before adjustment		26.77%
8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)		(4.95%)
9. July 1, 2017 Tier 1/Tier 2 UAL rate, before collar		10.07%
10. July 1, 2017 Tier 1/Tier 2 UAL rate, after collar	(8. + 9.)	5.12%
11. July 1, 2017 Tier 1/Tier 2 pension rate, after collar		21.82%
12. Tier 1/Tier 2 retiree healthcare rate		0.50%
13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)		0.00%
14. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment		16.55%
15. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)		16.55%
16. July 1, 2017 Tier 1/Tier 2 pension rate, after minimum adjustment	(11. + 13.)	21.82%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Post-Rate Collar)

The table below summarizes the employer's pension contribution rate for Tier 1 /Tier 2 after adjustments for the rate collar and the 6 percent of payroll minimum employer contribution rate.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	16.55%	17.06%
b. Tier 1/Tier 2 UAL rate	5.12%	4.61%
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate <i>(a. + b. + c., minimum of 5.50%)</i>	21.82%	21.82%

Data

Demographic Information

Employer Valuation Payroll

	General Service	Police & Fire	Total
Tier 1	\$3,208,635	\$4,402,095	\$7,610,730
Tier 2	6,087,757	6,589,834	12,677,591
Tier 1/Tier 2 valuation payroll	9,296,392	10,991,929	20,288,321
OPSRP valuation payroll	15,041,558	6,505,572	21,547,130
Combined valuation payroll	\$24,337,950	\$17,497,501	\$41,835,451

Employer Member Census

	December 31							
	2015				2014			
	Tier 1	Tier 2	OPSRP	Total	Tier 1	Tier 2	OPSRP	Total
Active Members ¹								
General Service	38	79	223	340	44	86	170	300
Police & Fire	37	61	72	170	44	64	51	159
Total	75	140	295	510	88	150	221	459
Active Members with previous service segments with the employer								
General Service	14	20	N/A	34	15	18	N/A	33
Police & Fire	6	6	N/A	12	6	4	N/A	10
Total	20	26	N/A	46	21	22	N/A	43
Dormant Members								
General Service	28	26	12	66	30	23	12	65
Police & Fire	11	7	5	23	14	4	4	22
Total	39	33	17	89	44	27	16	87
Retired Members and Beneficiaries								
General Service	134	27	7	168	135	19	4	158
Police & Fire	114	1	0	115	107	0	0	107
Total	248	28	7	283	242	19	4	265
Grand Total Number of Members	382	227	319	928	395	218	241	854

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Data

Demographic Information (continued)

Employer Tier 1/Tier 2 Active Members as of December 31, 2015

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
<20										
20-24										
25-29										
30-34			2							2
35-39		1	16	11						28
40-44		1	24	23	3					51
45-49		1	12	15	13	2				43
50-54		1	7	11	11	6				36
55-59			9	7	8	7	1	1		33
60-64		1	7	3	4	1	1			17
65-69			1	2	1				1	5
70-74										
75+										
Total	0	5	78	72	40	16	2	1	1	215

Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2015

Dormant Members			Retired Members and Beneficiaries		
Age	Count	Average Deferred Monthly Benefit	Age	Count	Average Monthly Benefit
<20			<45	2	83
20-24			45-49	3	2,601
25-29			50-54	1	7,366
30-34	1	272	55-59	30	3,103
35-39	5	878	60-64	65	2,717
40-44	6	609	65-69	68	2,458
45-49	21	1,561	70-74	44	2,314
50-54	13	1,769	75-79	30	1,937
55-59	17	1,556	80-84	17	2,055
60-64	4	365	85-89	13	870
65-69	5	952	90-94	2	1,265
70-74			95-99	1	268
75+			100+		
Total	72	1,344	Total	276	2,395

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2015 valuation can be found in the system-wide actuarial valuation report.

Actuarial Methods and Valuation Procedures

A brief summary of the methods used in this valuation is shown below:

<i>Actuarial cost method</i>	Entry Age Normal.
<i>Amortization Method</i>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. Gains and losses between subsequent odd-year valuations will be amortized as a level percentage of projected combined valuation payroll over a closed 20 year period.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.</p>

Economic Assumptions

A brief summary of the key economic assumptions used in this valuation is shown below:

<i>Net investment return</i>	7.50% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.50% compounded annually on members' regular account balances.</p> <p>7.50% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 6.3% in 2016 to 4.4% in 2094.
<i>Administrative Expenses</i>	<p>\$5.5 million added to OPSRP normal cost.</p> <p>\$33.0 million added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2014 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

There were no changes in actuarial methods and allocation procedures since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA actuarial methods and allocation procedures is provided as part of the system-wide valuation report.

Changes in Assumptions

There were no changes in assumptions since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA assumptions is provided as part of the system-wide valuation report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Glossary

Actuarial Accrued Liability

The portion of the present value of prospective benefits allocated to service and compensation before the valuation date in accordance with the actuarial cost method.

Actuarial Asset Value

The value of assets used in calculating the required contributions. The actuarial asset value may be equal to the fair market value of assets, or it may spread the recognition of certain investment gains or losses over a period of years in accordance with an asset valuation method.

Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disablement and retirement; rates of investment earnings and other relevant items.

Actuarial Cost Method

Sometimes called “funding method,” a particular technique used by actuaries to establish the amount and incidence of the annual actuarial cost of pension plan benefits, or normal cost, and the related unfunded actuarial accrued liability. Ordinarily, the annual contribution to the plan comprises the normal cost and an amount for amortization of the unfunded actuarial accrued liability.

Actuarial Gain or (Loss)

A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions, during the period between two actuarial valuation dates, as determined in accordance with a particular actuarial cost method.

Combined Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for both Tier 1/Tier 2 and OPSRP active members. This payroll is used to calculate UAL rates.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

Employer Contribution Rate

Consists of the normal cost rate and the UAL rates, plus adjustments for other items such as side account rate offsets.

Funded Status

The actuarial value of assets expressed as a percentage of the actuarial accrued liability.

Normal Cost

The annual cost allocated to the current year, under the actuarial cost method in use. The normal cost divided by the applicable payroll is the normal cost rate.

OPSRP Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for OPSRP active members. This payroll is used to calculate OPSRP normal cost rates.

Glossary

Pre-SLGRP Liability

The sum of Pre-SLGRP Pooled Liabilities and Transition Liabilities.

Pre-SLGRP Pooled Liability

The difference between the total UAL and the UAL attributable to the SLGRP for a pool of employers that joined the SLGRP. There are currently two pre-SLGRP pools. One was created for State Agencies and Community Colleges when the SLGRP was formed. The other one was created when the Local Government Rate Pool joined the SLGRP.

Present Value

Sometimes called “actuarial present value,” the estimated cost (as of the valuation date) of a series of future payments. The present value is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Rate Collar

A methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution rate and funded status.

Required Supplementary Information (RSI)

Schedules, statistical data, and other information that are an essential part of financial reporting and should be presented with, but are not part of, the basic financial statements of a governmental entity.

Statement No. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions.

Statement No. 68 of the Governmental Accounting Standards Board (GASB 68)

The accounting standard governing a state or local governmental employer’s accounting for pensions for fiscal years beginning after June 15, 2014.

Statement No. 75 of the Governmental Accounting Standards Board (GASB 75)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

The difference between the total UAL and the UAL attributable to the SLGRP for an individual employer that joined the SLGRP or the Local Government Rate Pool.

Unfunded Accrued Liability (UAL)

The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. The UAL is divided by combined valuation payroll and an amortization factor to determine an initial pre-collar UAL rate. The final UAL rate can be adjusted by the rate collar.



Milliman
111 SW Fifth Avenue, Suite 3700
Portland, OR 97204-3654
503 227 0634

This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

September 2016

City of Canyonville/2149
Oregon Public Employees Retirement System

Dear Sir or Madam:

As part of our engagement with the Oregon Public Employees Retirement Board, we performed a system-wide actuarial valuation of the Oregon Public Employees Retirement System (“PERS” or “the System”) as of December 31, 2015. The attached report, which is an informational supplement to the system-wide report, provides you with employer-specific contribution rates that will become effective July 1, 2017. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information will be provided separately by PERS and is not included in this report.

This report reflects the System's benefit provisions in effect as of December 31, 2015. The full development of the valuation results for the OPSRP and Retiree Health Insurance Account (RHIA) programs can be found in the separate system-wide actuarial valuation report. Costs of the IAP (Individual Account Program) are not included in this or the system-wide actuarial valuation report. Further, costs of pension obligation bond payments are not included in this or the system-wide actuarial valuation report.

If you have any questions about this report, please contact Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, OPSRP general service, and OPSRP police and fire payroll,
- Information to assist you in completing GASB 45 financial reporting requirements, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- Detailed development of Tier 1/Tier 2 valuation results,
- A brief summary of methods and assumptions, and
- A brief summary of any changes in System benefit provisions.

Additional information is provided in the system-wide actuarial valuation report, which is available at www.oregon.gov/PERS/Pages/section/financial_reports/financials.aspx.



September 2016
City of Canyonville/2149

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the System's staff. This information includes, but is not limited to, System benefit provisions as defined by statute, member census data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for the System have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer a reasonable estimate of anticipated experience affecting the System.

A valuation report is only an estimate of the System's financial condition as of a single date. It can neither predict the System's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of System benefits, only the timing of System contributions. While a valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: System experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the System's funded status); and changes in System benefit provisions or applicable law. Due to the limited scope of this assignment, we did not perform an analysis of the potential range of future measurements. The Board has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in September 2015.

Some of the actuarial computations presented in this report are for purposes of determining the contribution rates effective from July 2017 to June 2019 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.



September 2016
City of Canyonville/2149

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the System. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

Additional information is provided in the system-wide actuarial valuation report.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Larrabee".

Matt Larrabee, FSA, EA, MAAA
Principal and Consulting Actuary

A handwritten signature in black ink, appearing to read "Scott Preppernau".

Scott Preppernau, FSA, EA, MAAA
Principal and Consulting Actuary



ACTUARIAL VALUATION REPORT DECEMBER 31, 2015

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

INDEPENDENT EMPLOYERS

City of Canyonville -- #2149

September 2016

CONTENTS

- Executive Summary** **1**
- Employer Contribution Rates* 1
- Accounting Information* 3
- Principal Valuation Results* 5
- Employer 5
- Tier 1/Tier 2 6
- OPSRP 7
- Retiree Healthcare 7
- Side Account Information** **8**
- Tier 1/Tier 2 Valuation Results** **10**
- Assets* 10
- Liabilities* 11
- Unfunded Accrued Liability (UAL)* 13
- Contribution Rate Development* 15
- Data** **20**
- Brief Summary of Actuarial Methods and Assumptions** **22**
- Brief Summary of Changes in Plan Provisions** **24**
- Glossary** **25**

Executive Summary

Milliman has prepared this report for City of Canyonville to:

- Provide summary December 31, 2015 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2017 through June 30, 2019,
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2015, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45. GASB 68 information will be provided separately by PERS and is not included in this report.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2015 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to City of Canyonville.

Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2017 through June 30, 2019 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

Employer Rates Effective July 1, 2017 for City of Canyonville

	Payroll		
	Tier 1/Tier 2	OPSRP	
		General Service	Police & Fire
Pension			
Normal cost rate	16.23%	8.02%	12.79%
Tier 1/Tier 2 UAL rate ¹	(0.09%)	(0.09%)	(0.09%)
OPSRP UAL rate	1.27%	1.27%	1.27%
Side account rate relief	0.00%	0.00%	0.00%
Net pension contribution rate	17.41%	9.20%	13.97%
Retiree Healthcare			
Normal cost rate	0.07%	0.00%	0.00%
UAL rate	0.43%	0.43%	0.43%
Net retiree healthcare rate	0.50%	0.43%	0.43%
Total net employer contribution rate	17.91%	9.63%	14.40%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate.

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 Biennium

The rate collar limits changes in contribution rates, but does not limit changes in rates for individual employers related to side accounts. The table below shows the possible minimum and maximum rates first effective as of July 1, 2019, which will depend on the funded status as of December 31, 2017. If the employer's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2015 is 78%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	16.14%	16.14%
Minimum 2019-2021 Rate	12.91%	9.68%
Maximum 2019-2021 Rate	19.37%	22.60%

Executive Summary

Accounting Information

Milliman is not an accounting or audit firm and cannot provide accounting advice. Milliman is not responsible for the interpretation of, or compliance with, accounting standards; citations to, and descriptions of accounting standards provided in this report are for reference purposes only. The information provided in this section is intended to assist the employer in completing its financial statements, but any accounting determination should be reviewed by your auditor.

Pension

In June 2012 the GASB issued Statement No. 68, which replaced GASB 27 and governs employer financial reporting for fiscal years beginning after June 15, 2014. The new standard replaced many of the key elements of the prior reporting requirements. Under the new rules, employers are required to record a balance sheet liability for their unfunded pension obligations. In addition, the timing and coordination of plan and employer reporting has changed under the new requirements. GASB 68 information for employers will be provided separately by PERS and is not included in this report.

Schedule of Funding Progress

Under GASB 27, the Schedule of Funding Progress for Tier 1/Tier 2 pension liabilities was reported in the Required Supplementary Information. This schedule is no longer required now that GASB 68 has replaced GASB 27. However, for additional information and the sake of historical comparison, the updated schedule is shown below for the last several valuations. For employers with side accounts, the actuarial value of assets in this Schedule includes the value of the employer's side accounts.

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (b - a)	Funded Ratio (a ÷ b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a) ÷ c)
12/31/2010	\$1,263,089	\$1,602,219	\$339,130	79%	\$340,758	100%
12/31/2011	1,221,583	1,673,061	451,478	73%	309,713	146%
12/31/2012	1,333,888	1,724,348	390,460	77%	314,703	124%
12/31/2013	1,474,051	1,627,567	153,516	91%	309,521	50%
12/31/2014	1,440,845	1,863,084	422,239	77%	279,461	151%
12/31/2015	1,377,386	1,758,563	381,177	78%	242,470	157%

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) is a cost-sharing pool under Statement No. 45 of the Governmental Accounting Standards Board (GASB 45). Consequently, each employer reports the contractually required contribution. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 was calculated as a part of this valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
	Tier 1 / Tier 2	OPSRP	
		General Service	Police & Fire
July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern employer financial reporting for retiree healthcare obligations for fiscal years beginning after June 15, 2017. In general, the changes required by GASB 75 parallel those that occurred for pension reporting when GASB 68 replaced GASB 27. Accounting information for reporting under GASB 75 will be provided separately and is not included in this report.

Executive Summary

Principal Valuation Results

A summary of principal valuation results from the current valuation and the prior valuation follows. Any changes in actuarial assumptions, methods or plan provisions between the two valuations are described later in this report. More detailed information can be found in the system-wide actuarial valuation report.

City of Canyonville

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
T1/T2 UAL	\$381,177	\$422,239
Allocated pooled OPSRP UAL	34,470	31,948
Side account	0	0
Net unfunded pension actuarial accrued liability	415,647	454,187
Combined valuation payroll	242,470	279,461
Net pension UAL as a percentage of payroll	171%	163%
Calculated side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	\$1,177	\$2,221

In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer’s combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.

Executive Summary

Principal Valuation Results (continued)

Tier 1/Tier 2

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
Normal cost	\$15,719	\$23,213
Tier 1/Tier 2 valuation payroll	96,869	145,240
Tier 1/Tier 2 pension normal cost rate	16.23%	15.98%
Tier 1/ Tier 2 Actuarial accrued liability	\$1,758,563	\$1,863,084
Actuarial asset value	1,377,386	1,440,845
Tier 1/Tier 2 Unfunded actuarial accrued liability	381,177	422,239
Tier 1/ Tier 2 Funded status	78%	77%
Combined valuation payroll	\$242,470	\$279,461
Tier 1/Tier 2 UAL as a percentage of payroll	157%	151%
Tier 1/Tier 2 UAL rate (includes Multnomah Fire District #10)	(0.09%)	0.16%
Tier 1/Tier 2 active members ¹	2	3
Tier 1/Tier 2 dormant members	1	1
Tier 1/Tier 2 retirees and beneficiaries	23	23

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
General service normal cost	\$342.2	\$301.3
OPSRP general service valuation payroll	4,266.9	3,720.4
General service normal cost rate	8.02%	8.10%
Police and fire normal cost	\$69.9	\$59.6
OPSRP police and fire valuation payroll	546.4	462.3
Police and fire normal cost rate	12.79%	12.90%
Actuarial accrued liability	\$3,742.5	\$3,064.1
Actuarial asset value	2,389.1	2,024.6
Unfunded actuarial accrued liability	1,353.5	1,039.5
Funded status	64%	66%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	14%	11%
UAL rate	1.27%	1.01%

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
RHIA		
Normal cost	\$3.3	\$3.5
Tier 1 / Tier 2 valuation payroll	4,730.8	4,933.1
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	\$465.6	\$468.4
Actuarial asset value	419.3	395.9
Unfunded actuarial accrued liability	46.3	72.5
Funded status	90%	85%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	0%	1%
UAL rate	0.43%	0.43%

Side Account Information

Reconciliation of Side Accounts

The following table reconciles the total side account from the beginning of the year to the end of the year. Side account transfers were calculated by PERS and made on a monthly basis. The amount of these transfers is shown in the table below.

All information in this table has been provided by PERS.

	New	Continuing	Total
1. Side account as of December 31, 2014	N/A		
2. Deposits made during 2015		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2015			
5. Side account earnings during 2015			
6. Side account as of December 31, 2015 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2015	December 31, 2014
Side account 1	\$0	\$0
Side account 2	0	0
Side account 3	0	0
Total	\$0	\$0

Development of Side Account Rate

The rate relief attributable to an employer's side account is determined by amortizing the side account balance on the valuation date over a fixed period, and expressing the result as a percentage of combined valuation payroll. For side accounts established prior to December 31, 2009, the fixed period ends December 31, 2027. For side accounts established at a later date, the fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2015	December 31, 2014
1. Total side account	\$0	\$0
2. Combined valuation payroll	242,470	279,461
3. Average Amortization factor	9.504	10.118
4. Total side account rate (-1. ÷ 2. ÷ 3.)¹	0.00%	0.00%

¹ For employers with more than one side account, the Total Side Account Rate is determined by calculating the rate on each side account separately and adding the rates together.

Tier 1/Tier 2 Valuation Results

Assets

A summary of the market value of pension assets, and reconciliation from the prior year are shown below.

Summary of Market Value of Tier 1/Tier 2 Pension Assets

	December 31, 2015	December 31, 2014
1. Member reserves	\$106,643	\$86,806
2. Employer reserves	680,393	717,747
3. Benefits in force reserve	590,351	636,292
4. Total market value of assets (1. + 2. + 3.)	\$1,377,386	\$1,440,845

The market value of member and employer reserves is provided by PERS. The benefits in force reserve provided by PERS is allocated each year among employers in proportion to their liabilities for retired members and beneficiaries.

Reconciliation of Tier 1/Tier 2 Pension Assets

	December 31, 2014 to December 31, 2015
1. Market value of assets at beginning of year	\$1,440,845
2. Regular employer contributions	14,468
3. Benefit payments and expense	(107,356)
4. Adjustments ¹	3,516
5. Interest credited	25,913
6. Total transferred from side accounts	0
7. Market value of assets at end of year (1. + 2. + 3. + 4. + 5. + 6.)	\$1,377,386

¹ Note the adjustment item above includes a reallocation of the benefits in force reserve, transfers to Multnomah Fire District #10, and other adjustments made by PERS.

Tier 1/Tier 2 Valuation Results

Liabilities

Normal Cost

The normal cost represents the value of benefits assigned to the next year of service by the actuarial cost method. If all actuarial assumptions are met, the normal cost represents the amount that would need to be contributed each year to fund plan benefits. Amounts shown below include assumed administrative expenses, which are allocated pro-rata based on normal cost.

Summary of Normal Cost by Tier/Member Classification

	December 31, 2015	December 31, 2014
Tier 1 Police & Fire	\$0	\$0
Tier 1 General Service	9,560	9,244
Tier 2 Police & Fire	0	0
Tier 2 General Service	6,159	13,969
Total	\$15,719	\$23,213

Change in Tier 1/Tier 2 Normal Cost

The following table shows the impact of the assumption, method, and plan changes on normal cost as of December 31, 2015.

	Before Changes	After Changes	Net Change
Normal Cost	\$15,719	\$15,719	\$0

Tier 1/Tier 2 Valuation Results

Liabilities

Actuarial Accrued Liability

The actuarial accrued liability represents the value of benefits allocated to service performed before the valuation date by the actuarial cost method. If all actuarial assumptions are met, the actuarial accrued liability represents the amount of assets that would need to be accumulated as of the valuation date to provide for the portion of benefits allocated to service already performed.

Summary of Actuarial Accrued Liability by Tier/Member Classification

	December 31, 2015	December 31, 2014
Active Members		
▪ Tier 1 Police & Fire	\$13,448	\$13,388
▪ Tier 1 General Service	65,894	56,382
▪ Tier 2 Police & Fire	0	0
▪ Tier 2 General Service	364,071	501,775
▪ Total Active Members	\$443,413	\$571,545
Dormant Members	40,469	57,148
Retired Members and Beneficiaries	1,274,681	1,234,391
Total Actuarial Accrued Liability	\$1,758,563	\$1,863,084

Change in Tier 1/Tier 2 Actuarial Accrued Liability

The following table shows the impact of the assumption, method, and plan changes on the actuarial accrued liability as of December 31, 2015.

	Before Changes	After Changes	Net Change
Actuarial Accrued Liability	\$1,758,563	\$1,758,563	\$0

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Summary of UAL

The UAL represents the difference between the assets accumulated and the liability attributed to prior years of service by the cost method.

	December 31, 2015	December 31, 2014
1. Actuarial accrued liability	\$1,758,563	\$1,863,084
2. Actuarial value of assets	1,377,386	1,440,845
3. Unfunded accrued liability (1. – 2.)	381,177	422,239
4. Funded percentage (2. ÷ 1.)	78%	77%
5. Combined valuation payroll	\$242,470	\$279,461
6. Unfunded accrued liability as % of combined valuation payroll (3. ÷ 5.)	157%	151%

Reconciliation of UAL Bases

Beginning with the December 31, 2013 actuarial valuation, each odd-year valuation establishes a 20-year closed-period amortization schedule for outstanding Tier 1/Tier 2 UAL amounts. Amortization schedules are calculated based on the total Tier 1/Tier 2 UAL as of that valuation date less the remaining unamortized balance of previously established Tier 1/Tier 2 UAL bases.

Amortization Base	UAL December 31, 2014	Payment	Interest	UAL December 31, 2015	Next Year's Payment
December 31, 2013	\$153,844	\$11,524	\$11,078	\$153,398	\$11,927
December 31, 2015	N/A	N/A	N/A	\$227,779	\$16,482
Total				\$381,177	\$28,409

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Actuarial Gain or Loss since Prior Valuation

The system-wide actuarial valuation report contains a detailed analysis of gains and losses since the last valuation. The table below shows the gain or loss for the individual employer.

1. Expected actuarial accrued liability	
a. Actuarial accrued liability at December 31, 2014	\$1,863,084
b. Normal cost at December 31, 2014 (excluding assumed expenses)	22,274
c. Benefit payments during 2015	(106,527)
d. Interest at 7.50% to December 31, 2015	136,572
e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)	1,915,403
f. Change in actuarial accrued liability due to assumption, method, and plan changes	0
g. Expected actuarial accrued liability at December 31, 2015 (e. + f.)	1,915,403
2. Actuarial accrued liability at December 31, 2015	1,758,563
3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)	156,840
4. Expected actuarial value of assets	
a. Actuarial value of assets at December 31, 2014	1,440,845
b. Contributions for 2015 ¹	14,468
c. Benefit payments and expenses during 2015	(107,356)
d. Interest at 7.50% to December 31, 2015	104,580
e. Expected actuarial value of assets at December 31, 2015 (a. + b. + c. + d.)	1,452,537
5. Actuarial value of assets at December 31, 2015	1,377,386
6. Gain/(loss) on actuarial value of assets (5. - 4.e.)	(75,151)
7. Total actuarial gain/(loss) (3. + 6.)	\$81,689

Unfunded Accrued Liability Reconciliation

A reconciliation of the Tier 1/Tier 2 UAL from December 31, 2014 is provided below.

1. UAL at December 31, 2014	\$422,239
2. Expected increase	40,627
3. Liability (gain)/loss	(156,840)
4. Asset (gain)/loss	75,151
5. Change due to changes in assumptions, methods, and plan provisions	0
6. UAL at December 31, 2015 (1. + 2. + 3. + 4. + 5.)	\$381,177

¹ Includes rate relief from side accounts.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Normal Cost Rate

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

Development of Tier 1/Tier 2 Normal Cost Rate

	December 31, 2015			December 31, 2014		
	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate
Tier 1 Police & Fire	\$0	\$0	0.00%	\$0	\$0	0.00%
Tier 1 General Service	9,560	56,434	16.94%	9,244	55,624	16.62%
Tier 2 Police & Fire	0	0	0.00%	0	0	0.00%
Tier 2 General Service	6,159	40,435	15.23%	13,969	89,616	15.59%
Total	\$15,719	\$96,869	16.23%	\$23,213	\$145,240	15.98%

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Development of Tier 1/Tier 2 UAL Rates

The UAL rate is determined by calculating the next year's scheduled payment to the UAL as a percentage of combined valuation payroll.

	December 31, 2015	December 31, 2014
1. Total Tier 1/Tier 2 UAL	\$381,177	\$422,239
2. Next year's Tier 1/Tier 2 UAL payment	28,409	30,945
3. Combined valuation payroll	242,470	279,461
4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)	11.72%	11.07%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	16.23%	15.98%
b. Tier 1/Tier 2 UAL rate	11.72%	11.07%
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate (a. + b. + c.)	28.10%	27.20%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Adjustments Due to Rate Collar and Minimum Rate Requirements

Employer contribution rates are generally limited to change by no more than the greater of 3 percent of payroll or 20 percent from the current contribution rate. However, if the funded percentage excluding side accounts is below 60 percent or above 140 percent the rate collar doubles in size. If the funded percentage excluding side accounts is between 60 and 70 percent or 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

The table below shows the current contribution rate for the period from July 1, 2015 through June 30, 2017, develops the maximum and minimum contribution rates effective July 1, 2017 based on the collar, and calculates the net adjustment due to the collar and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

1. Current net Tier 1/Tier 2 pension contribution rate		13.14%
2. Employer contribution rate attributable to side accounts		0.00%
3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)		13.14%
4. Size of rate collar		
a. 20% of current employer contribution rate (20% x 3.)		2.63%
b. Preliminary size of rate collar (maximum of 3% or a.)		3.00%
c. Funded percentage		78%
d. Size of rate collar (If c. < 60% or c. > 140%, 2 x b. If c. is 70%-130%, b. Otherwise, a graded rate between b. and 2 x b.)		3.00%
5. July 1, 2017 minimum employer contribution rate	(3. – 4.d. but not < 0%)	10.14%
6. July 1, 2017 maximum employer contribution rate	(3. + 4.d.)	16.14%
7. July 1, 2017 total pension rate, before adjustment		28.10%
8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)		(11.96%)
9. July 1, 2017 Tier 1/Tier 2 UAL rate, before collar		11.72%
10. July 1, 2017 Tier 1/Tier 2 UAL rate, after collar	(8. + 9.)	(0.24%)
11. July 1, 2017 Tier 1/Tier 2 pension rate, after collar		16.14%
12. Tier 1/Tier 2 retiree healthcare rate		0.50%
13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)		0.00%
14. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment		16.23%
15. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)		16.23%
16. July 1, 2017 Tier 1/Tier 2 pension rate, after minimum adjustment	(11. + 13.)	16.14%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Post-Rate Collar)

The table below summarizes the employer's pension contribution rate for Tier 1 /Tier 2 after adjustments for the rate collar and the 6 percent of payroll minimum employer contribution rate.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	16.23%	15.98%
b. Tier 1/Tier 2 UAL rate	(0.24%)	0.01%
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate <i>(a. + b. + c., minimum of 5.50%)</i>	16.14%	16.14%

Data

Demographic Information

Employer Valuation Payroll

	General Service	Police & Fire	Total
Tier 1	\$56,434	\$0	\$56,434
Tier 2	40,435	0	40,435
Tier 1/Tier 2 valuation payroll	96,869	0	96,869
OPSRP valuation payroll	145,601	0	145,601
Combined valuation payroll	\$242,470	\$0	\$242,470

Employer Member Census

	December 31							
	2015				2014			
	Tier 1	Tier 2	OPSRP	Total	Tier 1	Tier 2	OPSRP	Total
Active Members ¹								
General Service	1	1	4	6	1	2	4	7
Police & Fire	0	0	0	0	0	0	0	0
Total	1	1	4	6	1	2	4	7
Active Members with previous service segments with the employer								
General Service	2	5	N/A	7	2	5	N/A	7
Police & Fire	1	0	N/A	1	1	0	N/A	1
Total	3	5	N/A	8	3	5	N/A	8
Dormant Members								
General Service	0	1	1	2	0	1	1	2
Police & Fire	0	0	0	0	0	0	0	0
Total	0	1	1	2	0	1	1	2
Retired Members and Beneficiaries								
General Service	12	3	0	15	13	2	0	15
Police & Fire	7	1	0	8	8	0	0	8
Total	19	4	0	23	21	2	0	23
Grand Total Number of Members	23	11	5	39	25	10	5	40

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Data

Demographic Information (continued)

Employer Tier 1/Tier 2 Active Members as of December 31, 2015

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
<20										
20-24										
25-29										
30-34										
35-39										
40-44										
45-49										
50-54										
55-59			1		1					2
60-64										
65-69										
70-74										
75+										
Total	0	0	1	0	1	0	0	0	0	2

Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2015

Dormant Members			Retired Members and Beneficiaries		
Age	Count	Average Deferred Monthly Benefit	Age	Count	Average Monthly Benefit
<20			<45		
20-24			45-49	1	99
25-29			50-54	1	64
30-34			55-59		
35-39			60-64	5	170
40-44			65-69	4	334
45-49			70-74	2	905
50-54			75-79	1	73
55-59			80-84	8	683
60-64	1	3,372	85-89		
65-69			90-94	1	247
70-74			95-99		
75+			100+		
Total	1	3,372	Total	23	432

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2015 valuation can be found in the system-wide actuarial valuation report.

Actuarial Methods and Valuation Procedures

A brief summary of the methods used in this valuation is shown below:

<i>Actuarial cost method</i>	Entry Age Normal.
<i>Amortization Method</i>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. Gains and losses between subsequent odd-year valuations will be amortized as a level percentage of projected combined valuation payroll over a closed 20 year period.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.</p>

Economic Assumptions

A brief summary of the key economic assumptions used in this valuation is shown below:

<i>Net investment return</i>	7.50% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.50% compounded annually on members' regular account balances.</p> <p>7.50% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 6.3% in 2016 to 4.4% in 2094.
<i>Administrative Expenses</i>	<p>\$5.5 million added to OPSRP normal cost.</p> <p>\$33.0 million added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2014 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

There were no changes in actuarial methods and allocation procedures since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA actuarial methods and allocation procedures is provided as part of the system-wide valuation report.

Changes in Assumptions

There were no changes in assumptions since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA assumptions is provided as part of the system-wide valuation report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Glossary

Actuarial Accrued Liability

The portion of the present value of prospective benefits allocated to service and compensation before the valuation date in accordance with the actuarial cost method.

Actuarial Asset Value

The value of assets used in calculating the required contributions. The actuarial asset value may be equal to the fair market value of assets, or it may spread the recognition of certain investment gains or losses over a period of years in accordance with an asset valuation method.

Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disablement and retirement; rates of investment earnings and other relevant items.

Actuarial Cost Method

Sometimes called “funding method,” a particular technique used by actuaries to establish the amount and incidence of the annual actuarial cost of pension plan benefits, or normal cost, and the related unfunded actuarial accrued liability. Ordinarily, the annual contribution to the plan comprises the normal cost and an amount for amortization of the unfunded actuarial accrued liability.

Actuarial Gain or (Loss)

A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions, during the period between two actuarial valuation dates, as determined in accordance with a particular actuarial cost method.

Combined Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for both Tier 1/Tier 2 and OPSRP active members. This payroll is used to calculate UAL rates.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

Employer Contribution Rate

Consists of the normal cost rate and the UAL rates, plus adjustments for other items such as side account rate offsets.

Funded Status

The actuarial value of assets expressed as a percentage of the actuarial accrued liability.

Normal Cost

The annual cost allocated to the current year, under the actuarial cost method in use. The normal cost divided by the applicable payroll is the normal cost rate.

OPSRP Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for OPSRP active members. This payroll is used to calculate OPSRP normal cost rates.

Glossary

Pre-SLGRP Liability

The sum of Pre-SLGRP Pooled Liabilities and Transition Liabilities.

Pre-SLGRP Pooled Liability

The difference between the total UAL and the UAL attributable to the SLGRP for a pool of employers that joined the SLGRP. There are currently two pre-SLGRP pools. One was created for State Agencies and Community Colleges when the SLGRP was formed. The other one was created when the Local Government Rate Pool joined the SLGRP.

Present Value

Sometimes called “actuarial present value,” the estimated cost (as of the valuation date) of a series of future payments. The present value is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Rate Collar

A methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution rate and funded status.

Required Supplementary Information (RSI)

Schedules, statistical data, and other information that are an essential part of financial reporting and should be presented with, but are not part of, the basic financial statements of a governmental entity.

Statement No. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions.

Statement No. 68 of the Governmental Accounting Standards Board (GASB 68)

The accounting standard governing a state or local governmental employer’s accounting for pensions for fiscal years beginning after June 15, 2014.

Statement No. 75 of the Governmental Accounting Standards Board (GASB 75)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

The difference between the total UAL and the UAL attributable to the SLGRP for an individual employer that joined the SLGRP or the Local Government Rate Pool.

Unfunded Accrued Liability (UAL)

The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. The UAL is divided by combined valuation payroll and an amortization factor to determine an initial pre-collar UAL rate. The final UAL rate can be adjusted by the rate collar.



Milliman
111 SW Fifth Avenue, Suite 3700
Portland, OR 97204-3654
503 227 0634

This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

September 2016

City of Chiloquin/2186
Oregon Public Employees Retirement System

Dear Sir or Madam:

As part of our engagement with the Oregon Public Employees Retirement Board, we performed a system-wide actuarial valuation of the Oregon Public Employees Retirement System (“PERS” or “the System”) as of December 31, 2015. The attached report, which is an informational supplement to the system-wide report, provides you with employer-specific contribution rates that will become effective July 1, 2017. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information will be provided separately by PERS and is not included in this report.

This report reflects the System's benefit provisions in effect as of December 31, 2015. The full development of the valuation results for the OPSRP and Retiree Health Insurance Account (RHIA) programs can be found in the separate system-wide actuarial valuation report. Costs of the IAP (Individual Account Program) are not included in this or the system-wide actuarial valuation report. Further, costs of pension obligation bond payments are not included in this or the system-wide actuarial valuation report.

If you have any questions about this report, please contact Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, OPSRP general service, and OPSRP police and fire payroll,
- Information to assist you in completing GASB 45 financial reporting requirements, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- Detailed development of Tier 1/Tier 2 valuation results,
- A brief summary of methods and assumptions, and
- A brief summary of any changes in System benefit provisions.

Additional information is provided in the system-wide actuarial valuation report, which is available at www.oregon.gov/PERS/Pages/section/financial_reports/financials.aspx.



September 2016
City of Chiloquin/2186

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the System's staff. This information includes, but is not limited to, System benefit provisions as defined by statute, member census data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for the System have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer a reasonable estimate of anticipated experience affecting the System.

A valuation report is only an estimate of the System's financial condition as of a single date. It can neither predict the System's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of System benefits, only the timing of System contributions. While a valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: System experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the System's funded status); and changes in System benefit provisions or applicable law. Due to the limited scope of this assignment, we did not perform an analysis of the potential range of future measurements. The Board has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in September 2015.

Some of the actuarial computations presented in this report are for purposes of determining the contribution rates effective from July 2017 to June 2019 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.



September 2016
City of Chiloquin/2186

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the System. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

Additional information is provided in the system-wide actuarial valuation report.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Larrabee".

Matt Larrabee, FSA, EA, MAAA
Principal and Consulting Actuary

A handwritten signature in black ink, appearing to read "Scott Preppernau".

Scott Preppernau, FSA, EA, MAAA
Principal and Consulting Actuary



ACTUARIAL VALUATION REPORT DECEMBER 31, 2015

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

INDEPENDENT EMPLOYERS

City of Chiloquin -- #2186

September 2016

This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

CONTENTS

Executive Summary **1**

Employer Contribution Rates 1

Accounting Information 3

Principal Valuation Results 5

 ▪ Employer 5

 ▪ Tier 1/Tier 2 6

 ▪ OPSRP 7

 ▪ Retiree Healthcare 7

Side Account Information **8**

Tier 1/Tier 2 Valuation Results **10**

Assets 10

Liabilities 11

Unfunded Accrued Liability (UAL) 13

Contribution Rate Development 15

Data **20**

Brief Summary of Actuarial Methods and Assumptions **22**

Brief Summary of Changes in Plan Provisions **24**

Glossary **25**

Executive Summary

Milliman has prepared this report for City of Chiloquin to:

- Provide summary December 31, 2015 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2017 through June 30, 2019,
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2015, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45. GASB 68 information will be provided separately by PERS and is not included in this report.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2015 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to City of Chiloquin.

Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2017 through June 30, 2019 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

Employer Rates Effective July 1, 2017 for City of Chiloquin

	Payroll		
	Tier 1/Tier 2	OPSRP General Service	OPSRP Police & Fire
Pension			
Normal cost rate	15.98%	8.02%	12.79%
Tier 1/Tier 2 UAL rate ¹	(3.16%)	(3.16%)	(3.16%)
OPSRP UAL rate	1.27%	1.27%	1.27%
Side account rate relief	0.00%	0.00%	0.00%
Net pension contribution rate	14.09%	6.13%	10.90%
Retiree Healthcare			
Normal cost rate	0.07%	0.00%	0.00%
UAL rate	0.43%	0.43%	0.43%
Net retiree healthcare rate	0.50%	0.43%	0.43%
Total net employer contribution rate	14.59%	6.56%	11.33%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate.

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 Biennium

The rate collar limits changes in contribution rates, but does not limit changes in rates for individual employers related to side accounts. The table below shows the possible minimum and maximum rates first effective as of July 1, 2019, which will depend on the funded status as of December 31, 2017. If the employer's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2015 is 108%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	12.82%	12.82%
Minimum 2019-2021 Rate	9.82%	6.82%
Maximum 2019-2021 Rate	15.82%	18.82%

Executive Summary

Accounting Information

Milliman is not an accounting or audit firm and cannot provide accounting advice. Milliman is not responsible for the interpretation of, or compliance with, accounting standards; citations to, and descriptions of accounting standards provided in this report are for reference purposes only. The information provided in this section is intended to assist the employer in completing its financial statements, but any accounting determination should be reviewed by your auditor.

Pension

In June 2012 the GASB issued Statement No. 68, which replaced GASB 27 and governs employer financial reporting for fiscal years beginning after June 15, 2014. The new standard replaced many of the key elements of the prior reporting requirements. Under the new rules, employers are required to record a balance sheet liability for their unfunded pension obligations. In addition, the timing and coordination of plan and employer reporting has changed under the new requirements. GASB 68 information for employers will be provided separately by PERS and is not included in this report.

Schedule of Funding Progress

Under GASB 27, the Schedule of Funding Progress for Tier 1/Tier 2 pension liabilities was reported in the Required Supplementary Information. This schedule is no longer required now that GASB 68 has replaced GASB 27. However, for additional information and the sake of historical comparison, the updated schedule is shown below for the last several valuations. For employers with side accounts, the actuarial value of assets in this Schedule includes the value of the employer's side accounts.

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (b - a)	Funded Ratio (a ÷ b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a) ÷ c)
12/31/2010	\$271,863	\$197,519	(\$74,344)	138%	\$149,992	(50%)
12/31/2011	269,067	209,321	(59,746)	129%	131,874	(45%)
12/31/2012	301,930	247,577	(54,353)	122%	173,359	(31%)
12/31/2013	338,970	260,327	(78,643)	130%	176,570	(45%)
12/31/2014	352,984	306,561	(46,423)	115%	177,348	(26%)
12/31/2015	350,569	324,903	(25,666)	108%	174,300	(15%)

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) is a cost-sharing pool under Statement No. 45 of the Governmental Accounting Standards Board (GASB 45). Consequently, each employer reports the contractually required contribution. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 was calculated as a part of this valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
	Tier 1 / Tier 2	OPSRP	
		General Service	Police & Fire
July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern employer financial reporting for retiree healthcare obligations for fiscal years beginning after June 15, 2017. In general, the changes required by GASB 75 parallel those that occurred for pension reporting when GASB 68 replaced GASB 27. Accounting information for reporting under GASB 75 will be provided separately and is not included in this report.

Executive Summary

Principal Valuation Results

A summary of principal valuation results from the current valuation and the prior valuation follows. Any changes in actuarial assumptions, methods or plan provisions between the two valuations are described later in this report. More detailed information can be found in the system-wide actuarial valuation report.

City of Chiloquin

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
T1/T2 UAL	(\$25,666)	(\$46,423)
Allocated pooled OPSRP UAL	24,779	20,275
Side account	0	0
Net unfunded pension actuarial accrued liability	(887)	(26,148)
Combined valuation payroll	174,300	177,348
Net pension UAL as a percentage of payroll	(1%)	(15%)
Calculated side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	\$846	\$1,410

In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer’s combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.

Executive Summary

Principal Valuation Results (continued)

Tier 1/Tier 2

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
Normal cost	\$7,525	\$7,448
Tier 1/Tier 2 valuation payroll	47,079	47,226
Tier 1/Tier 2 pension normal cost rate	15.98%	15.77%
Tier 1/ Tier 2 Actuarial accrued liability	\$324,903	\$306,561
Actuarial asset value	350,569	352,984
Tier 1/Tier 2 Unfunded actuarial accrued liability	(25,666)	(46,423)
Tier 1/ Tier 2 Funded status	108%	115%
Combined valuation payroll	\$174,300	\$177,348
Tier 1/Tier 2 UAL as a percentage of payroll	(15%)	(26%)
Tier 1/Tier 2 UAL rate (includes Multnomah Fire District #10)	(3.16%)	(2.95%)
Tier 1/Tier 2 active members ¹	1	1
Tier 1/Tier 2 dormant members	1	1
Tier 1/Tier 2 retirees and beneficiaries	1	1

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
General service normal cost	\$342.2	\$301.3
OPSRP general service valuation payroll	4,266.9	3,720.4
General service normal cost rate	8.02%	8.10%
Police and fire normal cost	\$69.9	\$59.6
OPSRP police and fire valuation payroll	546.4	462.3
Police and fire normal cost rate	12.79%	12.90%
Actuarial accrued liability	\$3,742.5	\$3,064.1
Actuarial asset value	2,389.1	2,024.6
Unfunded actuarial accrued liability	1,353.5	1,039.5
Funded status	64%	66%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	14%	11%
UAL rate	1.27%	1.01%

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
RHIA		
Normal cost	\$3.3	\$3.5
Tier 1 / Tier 2 valuation payroll	4,730.8	4,933.1
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	\$465.6	\$468.4
Actuarial asset value	419.3	395.9
Unfunded actuarial accrued liability	46.3	72.5
Funded status	90%	85%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	0%	1%
UAL rate	0.43%	0.43%

Side Account Information

Reconciliation of Side Accounts

The following table reconciles the total side account from the beginning of the year to the end of the year. Side account transfers were calculated by PERS and made on a monthly basis. The amount of these transfers is shown in the table below.

All information in this table has been provided by PERS.

	New	Continuing	Total
1. Side account as of December 31, 2014	N/A		
2. Deposits made during 2015		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2015			
5. Side account earnings during 2015			
6. Side account as of December 31, 2015 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2015	December 31, 2014
Side account 1	\$0	\$0
Side account 2	0	0
Side account 3	0	0
Total	\$0	\$0

Development of Side Account Rate

The rate relief attributable to an employer's side account is determined by amortizing the side account balance on the valuation date over a fixed period, and expressing the result as a percentage of combined valuation payroll. For side accounts established prior to December 31, 2009, the fixed period ends December 31, 2027. For side accounts established at a later date, the fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2015	December 31, 2014
1. Total side account	\$0	\$0
2. Combined valuation payroll	174,300	177,348
3. Average Amortization factor	9.504	10.118
4. Total side account rate (-1. ÷ 2. ÷ 3.)¹	0.00%	0.00%

¹ For employers with more than one side account, the Total Side Account Rate is determined by calculating the rate on each side account separately and adding the rates together.

Tier 1/Tier 2 Valuation Results

Assets

A summary of the market value of pension assets, and reconciliation from the prior year are shown below.

Summary of Market Value of Tier 1/Tier 2 Pension Assets

	December 31, 2015	December 31, 2014
1. Member reserves	\$43,048	\$41,559
2. Employer reserves	264,477	263,521
3. Benefits in force reserve	43,044	47,903
4. Total market value of assets (1. + 2. + 3.)	\$350,569	\$352,984

The market value of member and employer reserves is provided by PERS. The benefits in force reserve provided by PERS is allocated each year among employers in proportion to their liabilities for retired members and beneficiaries.

Reconciliation of Tier 1/Tier 2 Pension Assets

	December 31, 2014 to December 31, 2015
1. Market value of assets at beginning of year	\$352,984
2. Regular employer contributions	(3,938)
3. Benefit payments and expense	(7,828)
4. Adjustments ¹	2,683
5. Interest credited	6,668
6. Total transferred from side accounts	0
7. Market value of assets at end of year (1. + 2. + 3. + 4. + 5. + 6.)	\$350,569

¹ Note the adjustment item above includes a reallocation of the benefits in force reserve, transfers to Multnomah Fire District #10, and other adjustments made by PERS.

Tier 1/Tier 2 Valuation Results

Liabilities

Normal Cost

The normal cost represents the value of benefits assigned to the next year of service by the actuarial cost method. If all actuarial assumptions are met, the normal cost represents the amount that would need to be contributed each year to fund plan benefits. Amounts shown below include assumed administrative expenses, which are allocated pro-rata based on normal cost.

Summary of Normal Cost by Tier/Member Classification

	December 31, 2015	December 31, 2014
Tier 1 Police & Fire	\$0	\$0
Tier 1 General Service	0	0
Tier 2 Police & Fire	0	0
Tier 2 General Service	7,525	7,448
Total	\$7,525	\$7,448

Change in Tier 1/Tier 2 Normal Cost

The following table shows the impact of the assumption, method, and plan changes on normal cost as of December 31, 2015.

	Before Changes	After Changes	Net Change
Normal Cost	\$7,525	\$7,525	\$0

Tier 1/Tier 2 Valuation Results

Liabilities

Actuarial Accrued Liability

The actuarial accrued liability represents the value of benefits allocated to service performed before the valuation date by the actuarial cost method. If all actuarial assumptions are met, the actuarial accrued liability represents the amount of assets that would need to be accumulated as of the valuation date to provide for the portion of benefits allocated to service already performed.

Summary of Actuarial Accrued Liability by Tier/Member Classification

	December 31, 2015	December 31, 2014
Active Members		
▪ Tier 1 Police & Fire	\$0	\$0
▪ Tier 1 General Service	0	0
▪ Tier 2 Police & Fire	0	0
▪ Tier 2 General Service	219,823	202,341
▪ Total Active Members	\$219,823	\$202,341
Dormant Members	12,140	11,288
Retired Members and Beneficiaries	92,940	92,932
Total Actuarial Accrued Liability	\$324,903	\$306,561

Change in Tier 1/Tier 2 Actuarial Accrued Liability

The following table shows the impact of the assumption, method, and plan changes on the actuarial accrued liability as of December 31, 2015.

	Before Changes	After Changes	Net Change
Actuarial Accrued Liability	\$324,903	\$324,903	\$0

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Summary of UAL

The UAL represents the difference between the assets accumulated and the liability attributed to prior years of service by the cost method.

	December 31, 2015	December 31, 2014
1. Actuarial accrued liability	\$324,903	\$306,561
2. Actuarial value of assets	350,569	352,984
3. Unfunded accrued liability (1. – 2.)	(25,666)	(46,423)
4. Funded percentage (2. ÷ 1.)	108%	115%
5. Combined valuation payroll	\$174,300	\$177,348
6. Unfunded accrued liability as % of combined valuation payroll (3. ÷ 5.)	(15%)	(26%)

Reconciliation of UAL Bases

Beginning with the December 31, 2013 actuarial valuation, each odd-year valuation establishes a 20-year closed-period amortization schedule for outstanding Tier 1/Tier 2 UAL amounts. Amortization schedules are calculated based on the total Tier 1/Tier 2 UAL as of that valuation date less the remaining unamortized balance of previously established Tier 1/Tier 2 UAL bases.

Amortization Base	UAL December 31, 2014	Payment	Interest	UAL December 31, 2015	Next Year's Payment
December 31, 2013	(\$78,811)	(\$5,903)	(\$5,675)	(\$78,583)	(\$6,110)
December 31, 2015	N/A	N/A	N/A	\$52,917	\$3,829
Total				(\$25,666)	(\$2,281)

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Actuarial Gain or Loss since Prior Valuation

The system-wide actuarial valuation report contains a detailed analysis of gains and losses since the last valuation. The table below shows the gain or loss for the individual employer.

1. Expected actuarial accrued liability	
a. Actuarial accrued liability at December 31, 2014	\$306,561
b. Normal cost at December 31, 2014 (excluding assumed expenses)	7,125
c. Benefit payments during 2015	(7,767)
d. Interest at 7.50% to December 31, 2015	22,968
e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)	328,887
f. Change in actuarial accrued liability due to assumption, method, and plan changes	0
g. Expected actuarial accrued liability at December 31, 2015 (e. + f.)	328,887
2. Actuarial accrued liability at December 31, 2015	324,903
3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)	3,984
4. Expected actuarial value of assets	
a. Actuarial value of assets at December 31, 2014	352,984
b. Contributions for 2015 ¹	(3,938)
c. Benefit payments and expenses during 2015	(7,828)
d. Interest at 7.50% to December 31, 2015	26,033
e. Expected actuarial value of assets at December 31, 2015 (a. + b. + c. + d.)	367,250
5. Actuarial value of assets at December 31, 2015	350,569
6. Gain/(loss) on actuarial value of assets (5. - 4.e.)	(16,681)
7. Total actuarial gain/(loss) (3. + 6.)	(\$12,697)

Unfunded Accrued Liability Reconciliation

A reconciliation of the Tier 1/Tier 2 UAL from December 31, 2014 is provided below.

1. UAL at December 31, 2014	(\$46,423)
2. Expected increase	8,060
3. Liability (gain)/loss	(3,984)
4. Asset (gain)/loss	16,681
5. Change due to changes in assumptions, methods, and plan provisions	0
6. UAL at December 31, 2015 (1. + 2. + 3. + 4. + 5.)	(\$25,666)

¹ Includes rate relief from side accounts.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Normal Cost Rate

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

Development of Tier 1/Tier 2 Normal Cost Rate

	December 31, 2015			December 31, 2014		
	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate
Tier 1 Police & Fire	\$0	\$0	0.00%	\$0	\$0	0.00%
Tier 1 General Service	0	0	0.00%	0	0	0.00%
Tier 2 Police & Fire	0	0	0.00%	0	0	0.00%
Tier 2 General Service	7,525	47,079	15.98%	7,448	47,226	15.77%
Total	\$7,525	\$47,079	15.98%	\$7,448	\$47,226	15.77%

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Development of Tier 1/Tier 2 UAL Rates

The UAL rate is determined by calculating the next year's scheduled payment to the UAL as a percentage of combined valuation payroll.

	December 31, 2015	December 31, 2014
1. Total Tier 1/Tier 2 UAL	(\$25,666)	(\$46,423)
2. Next year's Tier 1/Tier 2 UAL payment	(2,281)	(3,559)
3. Combined valuation payroll	174,300	177,348
4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)	(1.31%)	(2.01%)

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	15.98%	15.77%
b. Tier 1/Tier 2 UAL rate	(1.31%)	(2.01%)
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate (a. + b. + c.)	14.82%	13.91%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Adjustments Due to Rate Collar and Minimum Rate Requirements

Employer contribution rates are generally limited to change by no more than the greater of 3 percent of payroll or 20 percent from the current contribution rate. However, if the funded percentage excluding side accounts is below 60 percent or above 140 percent the rate collar doubles in size. If the funded percentage excluding side accounts is between 60 and 70 percent or 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

The table below shows the current contribution rate for the period from July 1, 2015 through June 30, 2017, develops the maximum and minimum contribution rates effective July 1, 2017 based on the collar, and calculates the net adjustment due to the collar and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

1. Current net Tier 1/Tier 2 pension contribution rate		9.82%
2. Employer contribution rate attributable to side accounts		0.00%
3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)		9.82%
4. Size of rate collar		
a. 20% of current employer contribution rate (20% x 3.)		1.96%
b. Preliminary size of rate collar (maximum of 3% or a.)		3.00%
c. Funded percentage		108%
d. Size of rate collar (If c. < 60% or c. > 140%, 2 x b. If c. is 70%-130%, b. Otherwise, a graded rate between b. and 2 x b.)		3.00%
5. July 1, 2017 minimum employer contribution rate	(3. – 4.d. but not < 0%)	6.82%
6. July 1, 2017 maximum employer contribution rate	(3. + 4.d.)	12.82%
7. July 1, 2017 total pension rate, before adjustment		14.82%
8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)		(2.00%)
9. July 1, 2017 Tier 1/Tier 2 UAL rate, before collar		(1.31%)
10. July 1, 2017 Tier 1/Tier 2 UAL rate, after collar	(8. + 9.)	(3.31%)
11. July 1, 2017 Tier 1/Tier 2 pension rate, after collar		12.82%
12. Tier 1/Tier 2 retiree healthcare rate		0.50%
13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)		0.00%
14. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment		15.98%
15. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)		15.98%
16. July 1, 2017 Tier 1/Tier 2 pension rate, after minimum adjustment	(11. + 13.)	12.82%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Post-Rate Collar)

The table below summarizes the employer's pension contribution rate for Tier 1 /Tier 2 after adjustments for the rate collar and the 6 percent of payroll minimum employer contribution rate.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	15.98%	15.77%
b. Tier 1/Tier 2 UAL rate	(3.31%)	(3.10%)
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate <i>(a. + b. + c., minimum of 5.50%)</i>	12.82%	12.82%

Data

Demographic Information

Employer Valuation Payroll

	General Service	Police & Fire	Total
Tier 1	\$0	\$0	\$0
Tier 2	47,079	0	47,079
Tier 1/Tier 2 valuation payroll	47,079	0	47,079
OPSRP valuation payroll	127,221	0	127,221
Combined valuation payroll	\$174,300	\$0	\$174,300

Employer Member Census

	December 31							
	2015				2014			
	Tier 1	Tier 2	OPSRP	Total	Tier 1	Tier 2	OPSRP	Total
Active Members ¹								
General Service	0	1	3	4	0	1	3	4
Police & Fire	0	0	0	0	0	0	0	0
Total	0	1	3	4	0	1	3	4
Active Members with previous service segments with the employer								
General Service	0	1	N/A	1	0	1	N/A	1
Police & Fire	0	0	N/A	0	0	0	N/A	0
Total	0	1	N/A	1	0	1	N/A	1
Dormant Members								
General Service	1	0	0	1	1	0	0	1
Police & Fire	0	0	0	0	0	0	0	0
Total	1	0	0	1	1	0	0	1
Retired Members and Beneficiaries								
General Service	1	0	0	1	1	0	0	1
Police & Fire	0	0	0	0	0	0	0	0
Total	1	0	0	1	1	0	0	1
Grand Total Number of Members	2	2	3	7	2	2	3	7

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Data

Demographic Information (continued)

Employer Tier 1/Tier 2 Active Members as of December 31, 2015

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
<20										
20-24										
25-29										
30-34										
35-39										
40-44										
45-49										
50-54										
55-59				1						1
60-64										
65-69										
70-74										
75+										
Total	0	0	0	1	0	0	0	0	0	1

Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2015

Dormant Members			Retired Members and Beneficiaries		
Age	Count	Average Deferred Monthly Benefit	Age	Count	Average Monthly Benefit
<20			<45		
20-24			45-49		
25-29			50-54		
30-34			55-59		
35-39			60-64		
40-44			65-69	1	730
45-49			70-74		
50-54			75-79		
55-59			80-84		
60-64	1	78	85-89		
65-69			90-94		
70-74			95-99		
75+			100+		
Total	1	78	Total	1	730

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2015 valuation can be found in the system-wide actuarial valuation report.

Actuarial Methods and Valuation Procedures

A brief summary of the methods used in this valuation is shown below:

<i>Actuarial cost method</i>	Entry Age Normal.
<i>Amortization Method</i>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. Gains and losses between subsequent odd-year valuations will be amortized as a level percentage of projected combined valuation payroll over a closed 20 year period.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.</p>

Economic Assumptions

A brief summary of the key economic assumptions used in this valuation is shown below:

<i>Net investment return</i>	7.50% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.50% compounded annually on members' regular account balances.</p> <p>7.50% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 6.3% in 2016 to 4.4% in 2094.
<i>Administrative Expenses</i>	<p>\$5.5 million added to OPSRP normal cost.</p> <p>\$33.0 million added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2014 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

There were no changes in actuarial methods and allocation procedures since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA actuarial methods and allocation procedures is provided as part of the system-wide valuation report.

Changes in Assumptions

There were no changes in assumptions since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA assumptions is provided as part of the system-wide valuation report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Glossary

Actuarial Accrued Liability

The portion of the present value of prospective benefits allocated to service and compensation before the valuation date in accordance with the actuarial cost method.

Actuarial Asset Value

The value of assets used in calculating the required contributions. The actuarial asset value may be equal to the fair market value of assets, or it may spread the recognition of certain investment gains or losses over a period of years in accordance with an asset valuation method.

Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disablement and retirement; rates of investment earnings and other relevant items.

Actuarial Cost Method

Sometimes called “funding method,” a particular technique used by actuaries to establish the amount and incidence of the annual actuarial cost of pension plan benefits, or normal cost, and the related unfunded actuarial accrued liability. Ordinarily, the annual contribution to the plan comprises the normal cost and an amount for amortization of the unfunded actuarial accrued liability.

Actuarial Gain or (Loss)

A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions, during the period between two actuarial valuation dates, as determined in accordance with a particular actuarial cost method.

Combined Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for both Tier 1/Tier 2 and OPSRP active members. This payroll is used to calculate UAL rates.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

Employer Contribution Rate

Consists of the normal cost rate and the UAL rates, plus adjustments for other items such as side account rate offsets.

Funded Status

The actuarial value of assets expressed as a percentage of the actuarial accrued liability.

Normal Cost

The annual cost allocated to the current year, under the actuarial cost method in use. The normal cost divided by the applicable payroll is the normal cost rate.

OPSRP Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for OPSRP active members. This payroll is used to calculate OPSRP normal cost rates.

Glossary

Pre-SLGRP Liability

The sum of Pre-SLGRP Pooled Liabilities and Transition Liabilities.

Pre-SLGRP Pooled Liability

The difference between the total UAL and the UAL attributable to the SLGRP for a pool of employers that joined the SLGRP. There are currently two pre-SLGRP pools. One was created for State Agencies and Community Colleges when the SLGRP was formed. The other one was created when the Local Government Rate Pool joined the SLGRP.

Present Value

Sometimes called “actuarial present value,” the estimated cost (as of the valuation date) of a series of future payments. The present value is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Rate Collar

A methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution rate and funded status.

Required Supplementary Information (RSI)

Schedules, statistical data, and other information that are an essential part of financial reporting and should be presented with, but are not part of, the basic financial statements of a governmental entity.

Statement No. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions.

Statement No. 68 of the Governmental Accounting Standards Board (GASB 68)

The accounting standard governing a state or local governmental employer’s accounting for pensions for fiscal years beginning after June 15, 2014.

Statement No. 75 of the Governmental Accounting Standards Board (GASB 75)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

The difference between the total UAL and the UAL attributable to the SLGRP for an individual employer that joined the SLGRP or the Local Government Rate Pool.

Unfunded Accrued Liability (UAL)

The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. The UAL is divided by combined valuation payroll and an amortization factor to determine an initial pre-collar UAL rate. The final UAL rate can be adjusted by the rate collar.



Milliman
111 SW Fifth Avenue, Suite 3700
Portland, OR 97204-3654
503 227 0634

This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

September 2016

Clackamas County Housing Authority/2518
Oregon Public Employees Retirement System

Dear Sir or Madam:

As part of our engagement with the Oregon Public Employees Retirement Board, we performed a system-wide actuarial valuation of the Oregon Public Employees Retirement System (“PERS” or “the System”) as of December 31, 2015. The attached report, which is an informational supplement to the system-wide report, provides you with employer-specific contribution rates that will become effective July 1, 2017. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information will be provided separately by PERS and is not included in this report.

This report reflects the System's benefit provisions in effect as of December 31, 2015. The full development of the valuation results for the OPSRP and Retiree Health Insurance Account (RHIA) programs can be found in the separate system-wide actuarial valuation report. Costs of the IAP (Individual Account Program) are not included in this or the system-wide actuarial valuation report. Further, costs of pension obligation bond payments are not included in this or the system-wide actuarial valuation report.

If you have any questions about this report, please contact Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, OPSRP general service, and OPSRP police and fire payroll,
- Information to assist you in completing GASB 45 financial reporting requirements, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- Detailed development of Tier 1/Tier 2 valuation results,
- A brief summary of methods and assumptions, and
- A brief summary of any changes in System benefit provisions.

Additional information is provided in the system-wide actuarial valuation report, which is available at www.oregon.gov/PERS/Pages/section/financial_reports/financials.aspx.



September 2016
Clackamas County Housing Authority/2518

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the System's staff. This information includes, but is not limited to, System benefit provisions as defined by statute, member census data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for the System have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer a reasonable estimate of anticipated experience affecting the System.

A valuation report is only an estimate of the System's financial condition as of a single date. It can neither predict the System's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of System benefits, only the timing of System contributions. While a valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: System experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the System's funded status); and changes in System benefit provisions or applicable law. Due to the limited scope of this assignment, we did not perform an analysis of the potential range of future measurements. The Board has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in September 2015.

Some of the actuarial computations presented in this report are for purposes of determining the contribution rates effective from July 2017 to June 2019 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.



September 2016
Clackamas County Housing Authority/2518

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the System. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

Additional information is provided in the system-wide actuarial valuation report.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Larrabee".

Matt Larrabee, FSA, EA, MAAA
Principal and Consulting Actuary

A handwritten signature in black ink, appearing to read "Scott Preppernau".

Scott Preppernau, FSA, EA, MAAA
Principal and Consulting Actuary



ACTUARIAL VALUATION REPORT DECEMBER 31, 2015

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

INDEPENDENT EMPLOYERS

Clackamas County Housing Authority -- #2518

September 2016

CONTENTS

Executive Summary **1**

Employer Contribution Rates 1

Accounting Information 3

Principal Valuation Results 5

 ▪ Employer 5

 ▪ Tier 1/Tier 2 6

 ▪ OPSRP 7

 ▪ Retiree Healthcare 7

Side Account Information **8**

Tier 1/Tier 2 Valuation Results **10**

Assets 10

Liabilities 11

Unfunded Accrued Liability (UAL) 13

Contribution Rate Development 15

Data **20**

Brief Summary of Actuarial Methods and Assumptions **22**

Brief Summary of Changes in Plan Provisions **24**

Glossary **25**

Executive Summary

Milliman has prepared this report for Clackamas County Housing Authority to:

- Provide summary December 31, 2015 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2017 through June 30, 2019,
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2015, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45. GASB 68 information will be provided separately by PERS and is not included in this report.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2015 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Clackamas County Housing Authority.

Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2017 through June 30, 2019 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

Employer Rates Effective July 1, 2017 for Clackamas County Housing Authority

	Payroll		
	Tier 1/Tier 2	OPSRP General Service	Police & Fire
Pension			
Normal cost rate	15.33%	8.02%	12.79%
Tier 1/Tier 2 UAL rate ¹	4.47%	4.47%	4.47%
OPSRP UAL rate	1.27%	1.27%	1.27%
Side account rate relief	0.00%	0.00%	0.00%
Net pension contribution rate	21.07%	13.76%	18.53%
Retiree Healthcare			
Normal cost rate	0.07%	0.00%	0.00%
UAL rate	0.43%	0.43%	0.43%
Net retiree healthcare rate	0.50%	0.43%	0.43%
Total net employer contribution rate	21.57%	14.19%	18.96%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate.

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 Biennium

The rate collar limits changes in contribution rates, but does not limit changes in rates for individual employers related to side accounts. The table below shows the possible minimum and maximum rates first effective as of July 1, 2019, which will depend on the funded status as of December 31, 2017. If the employer's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2015 is 75%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	19.80%	19.80%
Minimum 2019-2021 Rate	15.84%	11.88%
Maximum 2019-2021 Rate	23.76%	27.72%

Executive Summary

Accounting Information

Milliman is not an accounting or audit firm and cannot provide accounting advice. Milliman is not responsible for the interpretation of, or compliance with, accounting standards; citations to, and descriptions of accounting standards provided in this report are for reference purposes only. The information provided in this section is intended to assist the employer in completing its financial statements, but any accounting determination should be reviewed by your auditor.

Pension

In June 2012 the GASB issued Statement No. 68, which replaced GASB 27 and governs employer financial reporting for fiscal years beginning after June 15, 2014. The new standard replaced many of the key elements of the prior reporting requirements. Under the new rules, employers are required to record a balance sheet liability for their unfunded pension obligations. In addition, the timing and coordination of plan and employer reporting has changed under the new requirements. GASB 68 information for employers will be provided separately by PERS and is not included in this report.

Schedule of Funding Progress

Under GASB 27, the Schedule of Funding Progress for Tier 1/Tier 2 pension liabilities was reported in the Required Supplementary Information. This schedule is no longer required now that GASB 68 has replaced GASB 27. However, for additional information and the sake of historical comparison, the updated schedule is shown below for the last several valuations. For employers with side accounts, the actuarial value of assets in this Schedule includes the value of the employer's side accounts.

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (b - a)	Funded Ratio (a ÷ b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a) ÷ c)
12/31/2010	\$10,112,860	\$12,051,368	\$1,938,508	84%	\$2,099,623	92%
12/31/2011	10,097,984	12,671,485	2,573,501	80%	2,168,456	119%
12/31/2012	11,306,674	12,635,796	1,329,122	89%	2,138,503	62%
12/31/2013	12,525,314	13,459,586	934,272	93%	2,141,926	44%
12/31/2014	12,694,790	16,010,121	3,315,331	79%	2,040,650	162%
12/31/2015	12,441,069	16,500,427	4,059,358	75%	2,119,669	192%

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) is a cost-sharing pool under Statement No. 45 of the Governmental Accounting Standards Board (GASB 45). Consequently, each employer reports the contractually required contribution. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 was calculated as a part of this valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
	Tier 1 / Tier 2	OPSRP	
		General Service	Police & Fire
July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern employer financial reporting for retiree healthcare obligations for fiscal years beginning after June 15, 2017. In general, the changes required by GASB 75 parallel those that occurred for pension reporting when GASB 68 replaced GASB 27. Accounting information for reporting under GASB 75 will be provided separately and is not included in this report.

Executive Summary

Principal Valuation Results

A summary of principal valuation results from the current valuation and the prior valuation follows. Any changes in actuarial assumptions, methods or plan provisions between the two valuations are described later in this report. More detailed information can be found in the system-wide actuarial valuation report.

Clackamas County Housing Authority

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
T1/T2 UAL	\$4,059,358	\$3,315,331
Allocated pooled OPSRP UAL	301,341	233,291
Side account	0	0
Net unfunded pension actuarial accrued liability	4,360,699	3,548,622
Combined valuation payroll	2,119,669	2,040,650
Net pension UAL as a percentage of payroll	206%	174%
Calculated side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	\$10,292	\$16,220

In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer’s combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.

Executive Summary

Principal Valuation Results (continued)

Tier 1/Tier 2

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
Normal cost	\$200,036	\$204,561
Tier 1/Tier 2 valuation payroll	1,304,806	1,326,698
Tier 1/Tier 2 pension normal cost rate	15.33%	15.42%
Tier 1/ Tier 2 Actuarial accrued liability	\$16,500,427	\$16,010,121
Actuarial asset value	12,441,069	12,694,790
Tier 1/Tier 2 Unfunded actuarial accrued liability	4,059,358	3,315,331
Tier 1/ Tier 2 Funded status	75%	79%
Combined valuation payroll	\$2,119,669	\$2,040,650
Tier 1/Tier 2 UAL as a percentage of payroll	192%	162%
Tier 1/Tier 2 UAL rate (includes Multnomah Fire District #10)	4.47%	4.38%
Tier 1/Tier 2 active members ¹	23	23
Tier 1/Tier 2 dormant members	6	9
Tier 1/Tier 2 retirees and beneficiaries	48	47

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
General service normal cost	\$342.2	\$301.3
OPSRP general service valuation payroll	4,266.9	3,720.4
General service normal cost rate	8.02%	8.10%
Police and fire normal cost	\$69.9	\$59.6
OPSRP police and fire valuation payroll	546.4	462.3
Police and fire normal cost rate	12.79%	12.90%
Actuarial accrued liability	\$3,742.5	\$3,064.1
Actuarial asset value	2,389.1	2,024.6
Unfunded actuarial accrued liability	1,353.5	1,039.5
Funded status	64%	66%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	14%	11%
UAL rate	1.27%	1.01%

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
RHIA		
Normal cost	\$3.3	\$3.5
Tier 1 / Tier 2 valuation payroll	4,730.8	4,933.1
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	\$465.6	\$468.4
Actuarial asset value	419.3	395.9
Unfunded actuarial accrued liability	46.3	72.5
Funded status	90%	85%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	0%	1%
UAL rate	0.43%	0.43%

Side Account Information

Reconciliation of Side Accounts

The following table reconciles the total side account from the beginning of the year to the end of the year. Side account transfers were calculated by PERS and made on a monthly basis. The amount of these transfers is shown in the table below.

All information in this table has been provided by PERS.

	New	Continuing	Total
1. Side account as of December 31, 2014	N/A		
2. Deposits made during 2015		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2015			
5. Side account earnings during 2015			
6. Side account as of December 31, 2015 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2015	December 31, 2014
Side account 1	\$0	\$0
Side account 2	0	0
Side account 3	0	0
Total	\$0	\$0

Development of Side Account Rate

The rate relief attributable to an employer's side account is determined by amortizing the side account balance on the valuation date over a fixed period, and expressing the result as a percentage of combined valuation payroll. For side accounts established prior to December 31, 2009, the fixed period ends December 31, 2027. For side accounts established at a later date, the fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2015	December 31, 2014
1. Total side account	\$0	\$0
2. Combined valuation payroll	2,119,669	2,040,650
3. Average Amortization factor	9.504	10.118
4. Total side account rate (-1. ÷ 2. ÷ 3.)¹	0.00%	0.00%

¹ For employers with more than one side account, the Total Side Account Rate is determined by calculating the rate on each side account separately and adding the rates together.

Tier 1/Tier 2 Valuation Results

Assets

A summary of the market value of pension assets, and reconciliation from the prior year are shown below.

Summary of Market Value of Tier 1/Tier 2 Pension Assets

	December 31, 2015	December 31, 2014
1. Member reserves	\$1,468,591	\$1,482,954
2. Employer reserves	6,226,070	6,163,087
3. Benefits in force reserve	4,746,408	5,048,749
4. Total market value of assets (1. + 2. + 3.)	\$12,441,069	\$12,694,790

The market value of member and employer reserves is provided by PERS. The benefits in force reserve provided by PERS is allocated each year among employers in proportion to their liabilities for retired members and beneficiaries.

Reconciliation of Tier 1/Tier 2 Pension Assets

	December 31, 2014 to December 31, 2015
1. Market value of assets at beginning of year	\$12,694,790
2. Regular employer contributions	205,434
3. Benefit payments and expense	(863,140)
4. Adjustments ¹	106,135
5. Interest credited	297,851
6. Total transferred from side accounts	0
7. Market value of assets at end of year (1. + 2. + 3. + 4. + 5. + 6.)	\$12,441,069

¹ Note the adjustment item above includes a reallocation of the benefits in force reserve, transfers to Multnomah Fire District #10, and other adjustments made by PERS.

Tier 1/Tier 2 Valuation Results

Liabilities

Normal Cost

The normal cost represents the value of benefits assigned to the next year of service by the actuarial cost method. If all actuarial assumptions are met, the normal cost represents the amount that would need to be contributed each year to fund plan benefits. Amounts shown below include assumed administrative expenses, which are allocated pro-rata based on normal cost.

Summary of Normal Cost by Tier/Member Classification

	December 31, 2015	December 31, 2014
Tier 1 Police & Fire	\$0	\$0
Tier 1 General Service	84,118	96,502
Tier 2 Police & Fire	0	0
Tier 2 General Service	115,918	108,059
Total	\$200,036	\$204,561

Change in Tier 1/Tier 2 Normal Cost

The following table shows the impact of the assumption, method, and plan changes on normal cost as of December 31, 2015.

	Before Changes	After Changes	Net Change
Normal Cost	\$200,036	\$200,036	\$0

Tier 1/Tier 2 Valuation Results

Liabilities

Actuarial Accrued Liability

The actuarial accrued liability represents the value of benefits allocated to service performed before the valuation date by the actuarial cost method. If all actuarial assumptions are met, the actuarial accrued liability represents the amount of assets that would need to be accumulated as of the valuation date to provide for the portion of benefits allocated to service already performed.

Summary of Actuarial Accrued Liability by Tier/Member Classification

	December 31, 2015	December 31, 2014
Active Members		
▪ Tier 1 Police & Fire	\$0	\$0
▪ Tier 1 General Service	2,155,923	2,322,043
▪ Tier 2 Police & Fire	0	0
▪ Tier 2 General Service	2,341,810	2,032,572
▪ Total Active Members	\$4,497,733	\$4,354,615
Dormant Members	1,754,290	1,861,059
Retired Members and Beneficiaries	10,248,404	9,794,447
Total Actuarial Accrued Liability	\$16,500,427	\$16,010,121

Change in Tier 1/Tier 2 Actuarial Accrued Liability

The following table shows the impact of the assumption, method, and plan changes on the actuarial accrued liability as of December 31, 2015.

	Before Changes	After Changes	Net Change
Actuarial Accrued Liability	\$16,500,427	\$16,500,427	\$0

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Summary of UAL

The UAL represents the difference between the assets accumulated and the liability attributed to prior years of service by the cost method.

	December 31, 2015	December 31, 2014
1. Actuarial accrued liability	\$16,500,427	\$16,010,121
2. Actuarial value of assets	12,441,069	12,694,790
3. Unfunded accrued liability (1. – 2.)	4,059,358	3,315,331
4. Funded percentage (2. ÷ 1.)	75%	79%
5. Combined valuation payroll	\$2,119,669	\$2,040,650
6. Unfunded accrued liability as % of combined valuation payroll (3. ÷ 5.)	192%	162%

Reconciliation of UAL Bases

Beginning with the December 31, 2013 actuarial valuation, each odd-year valuation establishes a 20-year closed-period amortization schedule for outstanding Tier 1/Tier 2 UAL amounts. Amortization schedules are calculated based on the total Tier 1/Tier 2 UAL as of that valuation date less the remaining unamortized balance of previously established Tier 1/Tier 2 UAL bases.

Amortization Base	UAL December 31, 2014	Payment	Interest	UAL December 31, 2015	Next Year's Payment
December 31, 2013	\$936,266	\$70,132	\$67,418	\$933,552	\$72,588
December 31, 2015	N/A	N/A	N/A	\$3,125,806	\$226,180
Total				\$4,059,358	\$298,768

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Actuarial Gain or Loss since Prior Valuation

The system-wide actuarial valuation report contains a detailed analysis of gains and losses since the last valuation. The table below shows the gain or loss for the individual employer.

1. Expected actuarial accrued liability	
a. Actuarial accrued liability at December 31, 2014	\$16,010,121
b. Normal cost at December 31, 2014 (excluding assumed expenses)	195,682
c. Benefit payments during 2015	(856,473)
d. Interest at 7.50% to December 31, 2015	1,175,979
e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)	16,525,309
f. Change in actuarial accrued liability due to assumption, method, and plan changes	0
g. Expected actuarial accrued liability at December 31, 2015 (e. + f.)	16,525,309
2. Actuarial accrued liability at December 31, 2015	16,500,427
3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)	24,882
4. Expected actuarial value of assets	
a. Actuarial value of assets at December 31, 2014	12,694,790
b. Contributions for 2015 ¹	205,434
c. Benefit payments and expenses during 2015	(863,140)
d. Interest at 7.50% to December 31, 2015	927,445
e. Expected actuarial value of assets at December 31, 2015 (a. + b. + c. + d.)	12,964,528
5. Actuarial value of assets at December 31, 2015	12,441,069
6. Gain/(loss) on actuarial value of assets (5. - 4.e.)	(523,460)
7. Total actuarial gain/(loss) (3. + 6.)	(\$498,578)

Unfunded Accrued Liability Reconciliation

A reconciliation of the Tier 1/Tier 2 UAL from December 31, 2014 is provided below.

1. UAL at December 31, 2014	\$3,315,331
2. Expected increase	245,449
3. Liability (gain)/loss	(24,882)
4. Asset (gain)/loss	523,460
5. Change due to changes in assumptions, methods, and plan provisions	0
6. UAL at December 31, 2015 (1. + 2. + 3. + 4. + 5.)	\$4,059,358

¹ Includes rate relief from side accounts.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Normal Cost Rate

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

Development of Tier 1/Tier 2 Normal Cost Rate

	December 31, 2015			December 31, 2014		
	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate
Tier 1 Police & Fire	\$0	\$0	0.00%	\$0	\$0	0.00%
Tier 1 General Service	84,118	443,430	18.97%	96,502	501,784	19.23%
Tier 2 Police & Fire	0	0	0.00%	0	0	0.00%
Tier 2 General Service	115,918	861,376	13.46%	108,059	824,914	13.10%
Total	\$200,036	\$1,304,806	15.33%	\$204,561	\$1,326,698	15.42%

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Development of Tier 1/Tier 2 UAL Rates

The UAL rate is determined by calculating the next year's scheduled payment to the UAL as a percentage of combined valuation payroll.

	December 31, 2015	December 31, 2014
1. Total Tier 1/Tier 2 UAL	\$4,059,358	\$3,315,331
2. Next year's Tier 1/Tier 2 UAL payment	298,768	242,279
3. Combined valuation payroll	2,119,669	2,040,650
4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)	14.10%	11.87%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	15.33%	15.42%
b. Tier 1/Tier 2 UAL rate	14.10%	11.87%
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate (a. + b. + c.)	29.58%	27.44%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Adjustments Due to Rate Collar and Minimum Rate Requirements

Employer contribution rates are generally limited to change by no more than the greater of 3 percent of payroll or 20 percent from the current contribution rate. However, if the funded percentage excluding side accounts is below 60 percent or above 140 percent the rate collar doubles in size. If the funded percentage excluding side accounts is between 60 and 70 percent or 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

The table below shows the current contribution rate for the period from July 1, 2015 through June 30, 2017, develops the maximum and minimum contribution rates effective July 1, 2017 based on the collar, and calculates the net adjustment due to the collar and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

1. Current net Tier 1/Tier 2 pension contribution rate		16.50%
2. Employer contribution rate attributable to side accounts		0.00%
3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)		16.50%
4. Size of rate collar		
a. 20% of current employer contribution rate (20% x 3.)		3.30%
b. Preliminary size of rate collar (maximum of 3% or a.)		3.30%
c. Funded percentage		75%
d. Size of rate collar (If c. < 60% or c. > 140%, 2 x b. If c. is 70%-130%, b. Otherwise, a graded rate between b. and 2 x b.)		3.30%
5. July 1, 2017 minimum employer contribution rate	(3. – 4.d. but not < 0%)	13.20%
6. July 1, 2017 maximum employer contribution rate	(3. + 4.d.)	19.80%
7. July 1, 2017 total pension rate, before adjustment		29.58%
8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)		(9.78%)
9. July 1, 2017 Tier 1/Tier 2 UAL rate, before collar		14.10%
10. July 1, 2017 Tier 1/Tier 2 UAL rate, after collar	(8. + 9.)	4.32%
11. July 1, 2017 Tier 1/Tier 2 pension rate, after collar		19.80%
12. Tier 1/Tier 2 retiree healthcare rate		0.50%
13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)		0.00%
14. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment		15.33%
15. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)		15.33%
16. July 1, 2017 Tier 1/Tier 2 pension rate, after minimum adjustment	(11. + 13.)	19.80%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Post-Rate Collar)

The table below summarizes the employer's pension contribution rate for Tier 1 /Tier 2 after adjustments for the rate collar and the 6 percent of payroll minimum employer contribution rate.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	15.33%	15.42%
b. Tier 1/Tier 2 UAL rate	4.32%	4.23%
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate <i>(a. + b. + c., minimum of 5.50%)</i>	19.80%	19.80%

Data

Demographic Information

Employer Valuation Payroll

	General Service	Police & Fire	Total
Tier 1	\$443,430	\$0	\$443,430
Tier 2	861,376	0	861,376
Tier 1/Tier 2 valuation payroll	1,304,806	0	1,304,806
OPSRP valuation payroll	814,863	0	814,863
Combined valuation payroll	\$2,119,669	\$0	\$2,119,669

Employer Member Census

	December 31							
	2015				2014			
	Tier 1	Tier 2	OPSRP	Total	Tier 1	Tier 2	OPSRP	Total
Active Members ¹								
General Service	8	15	16	39	9	14	14	37
Police & Fire	0	0	0	0	0	0	0	0
Total	8	15	16	39	9	14	14	37
Active Members with previous service segments with the employer								
General Service	2	5	N/A	7	3	4	N/A	7
Police & Fire	0	0	N/A	0	0	0	N/A	0
Total	2	5	N/A	7	3	4	N/A	7
Dormant Members								
General Service	6	0	5	11	8	1	5	14
Police & Fire	0	0	0	0	0	0	0	0
Total	6	0	5	11	8	1	5	14
Retired Members and Beneficiaries								
General Service	38	10	0	48	37	10	0	47
Police & Fire	0	0	0	0	0	0	0	0
Total	38	10	0	48	37	10	0	47
Grand Total Number of Members	54	30	21	105	57	29	19	105

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Data

Demographic Information (continued)

Employer Tier 1/Tier 2 Active Members as of December 31, 2015

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
<20										
20-24										
25-29										
30-34										
35-39			1							1
40-44			1							1
45-49				2						2
50-54			2	3		2				7
55-59			4	2		1				7
60-64				1						1
65-69			1		2	1				4
70-74										
75+										
Total	0	0	9	8	2	4	0	0	0	23

Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2015

Dormant Members			Retired Members and Beneficiaries		
Age	Count	Average Deferred Monthly Benefit	Age	Count	Average Monthly Benefit
<20			<45		
20-24			45-49		
25-29			50-54		
30-34			55-59	4	1,944
35-39			60-64	8	1,757
40-44			65-69	16	1,629
45-49	2	921	70-74	5	782
50-54	2	3,053	75-79	8	1,445
55-59	1	3,049	80-84	3	1,215
60-64	1	3,052	85-89	1	1,193
65-69			90-94	2	651
70-74			95-99		
75+			100+	1	362
Total	6	2,341	Total	48	1,456

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2015 valuation can be found in the system-wide actuarial valuation report.

Actuarial Methods and Valuation Procedures

A brief summary of the methods used in this valuation is shown below:

<i>Actuarial cost method</i>	Entry Age Normal.
<i>Amortization Method</i>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. Gains and losses between subsequent odd-year valuations will be amortized as a level percentage of projected combined valuation payroll over a closed 20 year period.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.</p>

Economic Assumptions

A brief summary of the key economic assumptions used in this valuation is shown below:

<i>Net investment return</i>	7.50% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.50% compounded annually on members' regular account balances.</p> <p>7.50% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 6.3% in 2016 to 4.4% in 2094.
<i>Administrative Expenses</i>	<p>\$5.5 million added to OPSRP normal cost.</p> <p>\$33.0 million added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2014 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

There were no changes in actuarial methods and allocation procedures since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA actuarial methods and allocation procedures is provided as part of the system-wide valuation report.

Changes in Assumptions

There were no changes in assumptions since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA assumptions is provided as part of the system-wide valuation report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Glossary

Actuarial Accrued Liability

The portion of the present value of prospective benefits allocated to service and compensation before the valuation date in accordance with the actuarial cost method.

Actuarial Asset Value

The value of assets used in calculating the required contributions. The actuarial asset value may be equal to the fair market value of assets, or it may spread the recognition of certain investment gains or losses over a period of years in accordance with an asset valuation method.

Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disablement and retirement; rates of investment earnings and other relevant items.

Actuarial Cost Method

Sometimes called “funding method,” a particular technique used by actuaries to establish the amount and incidence of the annual actuarial cost of pension plan benefits, or normal cost, and the related unfunded actuarial accrued liability. Ordinarily, the annual contribution to the plan comprises the normal cost and an amount for amortization of the unfunded actuarial accrued liability.

Actuarial Gain or (Loss)

A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions, during the period between two actuarial valuation dates, as determined in accordance with a particular actuarial cost method.

Combined Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for both Tier 1/Tier 2 and OPSRP active members. This payroll is used to calculate UAL rates.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

Employer Contribution Rate

Consists of the normal cost rate and the UAL rates, plus adjustments for other items such as side account rate offsets.

Funded Status

The actuarial value of assets expressed as a percentage of the actuarial accrued liability.

Normal Cost

The annual cost allocated to the current year, under the actuarial cost method in use. The normal cost divided by the applicable payroll is the normal cost rate.

OPSRP Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for OPSRP active members. This payroll is used to calculate OPSRP normal cost rates.

Glossary

Pre-SLGRP Liability

The sum of Pre-SLGRP Pooled Liabilities and Transition Liabilities.

Pre-SLGRP Pooled Liability

The difference between the total UAL and the UAL attributable to the SLGRP for a pool of employers that joined the SLGRP. There are currently two pre-SLGRP pools. One was created for State Agencies and Community Colleges when the SLGRP was formed. The other one was created when the Local Government Rate Pool joined the SLGRP.

Present Value

Sometimes called “actuarial present value,” the estimated cost (as of the valuation date) of a series of future payments. The present value is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Rate Collar

A methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution rate and funded status.

Required Supplementary Information (RSI)

Schedules, statistical data, and other information that are an essential part of financial reporting and should be presented with, but are not part of, the basic financial statements of a governmental entity.

Statement No. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions.

Statement No. 68 of the Governmental Accounting Standards Board (GASB 68)

The accounting standard governing a state or local governmental employer’s accounting for pensions for fiscal years beginning after June 15, 2014.

Statement No. 75 of the Governmental Accounting Standards Board (GASB 75)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

The difference between the total UAL and the UAL attributable to the SLGRP for an individual employer that joined the SLGRP or the Local Government Rate Pool.

Unfunded Accrued Liability (UAL)

The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. The UAL is divided by combined valuation payroll and an amortization factor to determine an initial pre-collar UAL rate. The final UAL rate can be adjusted by the rate collar.



Milliman
111 SW Fifth Avenue, Suite 3700
Portland, OR 97204-3654
503 227 0634

This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

September 2016

Clackamas County/2001
Oregon Public Employees Retirement System

Dear Sir or Madam:

As part of our engagement with the Oregon Public Employees Retirement Board, we performed a system-wide actuarial valuation of the Oregon Public Employees Retirement System (“PERS” or “the System”) as of December 31, 2015. The attached report, which is an informational supplement to the system-wide report, provides you with employer-specific contribution rates that will become effective July 1, 2017. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information will be provided separately by PERS and is not included in this report.

This report reflects the System's benefit provisions in effect as of December 31, 2015. The full development of the valuation results for the OPSRP and Retiree Health Insurance Account (RHIA) programs can be found in the separate system-wide actuarial valuation report. Costs of the IAP (Individual Account Program) are not included in this or the system-wide actuarial valuation report. Further, costs of pension obligation bond payments are not included in this or the system-wide actuarial valuation report.

If you have any questions about this report, please contact Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, OPSRP general service, and OPSRP police and fire payroll,
- Information to assist you in completing GASB 45 financial reporting requirements, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- Detailed development of Tier 1/Tier 2 valuation results,
- A brief summary of methods and assumptions, and
- A brief summary of any changes in System benefit provisions.

Additional information is provided in the system-wide actuarial valuation report, which is available at www.oregon.gov/PERS/Pages/section/financial_reports/financials.aspx.



September 2016
Clackamas County/2001

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the System's staff. This information includes, but is not limited to, System benefit provisions as defined by statute, member census data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for the System have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer a reasonable estimate of anticipated experience affecting the System.

A valuation report is only an estimate of the System's financial condition as of a single date. It can neither predict the System's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of System benefits, only the timing of System contributions. While a valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: System experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the System's funded status); and changes in System benefit provisions or applicable law. Due to the limited scope of this assignment, we did not perform an analysis of the potential range of future measurements. The Board has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in September 2015.

Some of the actuarial computations presented in this report are for purposes of determining the contribution rates effective from July 2017 to June 2019 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.



September 2016
Clackamas County/2001

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the System. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

Additional information is provided in the system-wide actuarial valuation report.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Larrabee".

Matt Larrabee, FSA, EA, MAAA
Principal and Consulting Actuary

A handwritten signature in black ink, appearing to read "Scott Preppernau".

Scott Preppernau, FSA, EA, MAAA
Principal and Consulting Actuary



ACTUARIAL VALUATION REPORT DECEMBER 31, 2015

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

INDEPENDENT EMPLOYERS

Clackamas County -- #2001

September 2016

Secondary Employers

2045	Clackamas County Service District #1
2791	Clackamas County Fair

CONTENTS

- Executive Summary** **1**
- Employer Contribution Rates* 1
- Accounting Information* 3
- Principal Valuation Results* 5
- Employer 5
- Tier 1/Tier 2 6
- OPSRP 7
- Retiree Healthcare 7
- Side Account Information** **8**
- Tier 1/Tier 2 Valuation Results** **10**
- Assets* 10
- Liabilities* 11
- Unfunded Accrued Liability (UAL)* 13
- Contribution Rate Development* 15
- Data** **20**
- Brief Summary of Actuarial Methods and Assumptions** **22**
- Brief Summary of Changes in Plan Provisions** **24**
- Glossary** **25**

Executive Summary

Milliman has prepared this report for Clackamas County to:

- Provide summary December 31, 2015 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2017 through June 30, 2019,
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2015, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45. GASB 68 information will be provided separately by PERS and is not included in this report.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2015 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Clackamas County.

Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2017 through June 30, 2019 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

Employer Rates Effective July 1, 2017 for Clackamas County

	Payroll		
	Tier 1/Tier 2	OPSRP	
		General Service	Police & Fire
Pension			
Normal cost rate	16.20%	8.02%	12.79%
Tier 1/Tier 2 UAL rate ¹	5.10%	5.10%	5.10%
OPSRP UAL rate	1.27%	1.27%	1.27%
Side account rate relief	0.00%	0.00%	0.00%
Net pension contribution rate	22.57%	14.39%	19.16%
Retiree Healthcare			
Normal cost rate	0.07%	0.00%	0.00%
UAL rate	0.43%	0.43%	0.43%
Net retiree healthcare rate	0.50%	0.43%	0.43%
Total net employer contribution rate	23.07%	14.82%	19.59%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate.

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 Biennium

The rate collar limits changes in contribution rates, but does not limit changes in rates for individual employers related to side accounts. The table below shows the possible minimum and maximum rates first effective as of July 1, 2019, which will depend on the funded status as of December 31, 2017. If the employer's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2015 is 73%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	21.30%	21.30%
Minimum 2019-2021 Rate	17.04%	12.78%
Maximum 2019-2021 Rate	25.56%	29.82%

Executive Summary

Accounting Information

Milliman is not an accounting or audit firm and cannot provide accounting advice. Milliman is not responsible for the interpretation of, or compliance with, accounting standards; citations to, and descriptions of accounting standards provided in this report are for reference purposes only. The information provided in this section is intended to assist the employer in completing its financial statements, but any accounting determination should be reviewed by your auditor.

Pension

In June 2012 the GASB issued Statement No. 68, which replaced GASB 27 and governs employer financial reporting for fiscal years beginning after June 15, 2014. The new standard replaced many of the key elements of the prior reporting requirements. Under the new rules, employers are required to record a balance sheet liability for their unfunded pension obligations. In addition, the timing and coordination of plan and employer reporting has changed under the new requirements. GASB 68 information for employers will be provided separately by PERS and is not included in this report.

Schedule of Funding Progress

Under GASB 27, the Schedule of Funding Progress for Tier 1/Tier 2 pension liabilities was reported in the Required Supplementary Information. This schedule is no longer required now that GASB 68 has replaced GASB 27. However, for additional information and the sake of historical comparison, the updated schedule is shown below for the last several valuations. For employers with side accounts, the actuarial value of assets in this Schedule includes the value of the employer's side accounts.

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (b - a)	Funded Ratio (a ÷ b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a) ÷ c)
12/31/2010	\$548,929,719	\$669,985,910	\$121,056,191	82%	\$119,256,210	102%
12/31/2011	538,168,129	693,798,252	155,630,123	78%	119,485,687	130%
12/31/2012	590,126,155	690,218,356	100,092,201	86%	123,609,884	81%
12/31/2013	647,928,769	720,844,889	72,916,120	90%	128,333,189	57%
12/31/2014	668,009,480	853,817,702	185,808,222	78%	131,578,857	141%
12/31/2015	652,139,641	890,605,763	238,466,122	73%	140,238,319	170%

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) is a cost-sharing pool under Statement No. 45 of the Governmental Accounting Standards Board (GASB 45). Consequently, each employer reports the contractually required contribution. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 was calculated as a part of this valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
	Tier 1 / Tier 2	OPSRP	
		General Service	Police & Fire
July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern employer financial reporting for retiree healthcare obligations for fiscal years beginning after June 15, 2017. In general, the changes required by GASB 75 parallel those that occurred for pension reporting when GASB 68 replaced GASB 27. Accounting information for reporting under GASB 75 will be provided separately and is not included in this report.

Executive Summary

Principal Valuation Results

A summary of principal valuation results from the current valuation and the prior valuation follows. Any changes in actuarial assumptions, methods or plan provisions between the two valuations are described later in this report. More detailed information can be found in the system-wide actuarial valuation report.

Clackamas County

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
T1/T2 UAL	\$238,466,122	\$185,808,222
Allocated pooled OPSRP UAL	19,936,832	15,042,328
Side account	0	0
Net unfunded pension actuarial accrued liability	258,402,954	200,850,550
Combined valuation payroll	140,238,319	131,578,857
Net pension UAL as a percentage of payroll	184%	153%
Calculated side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	\$680,949	\$1,045,866

In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer's combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.

Executive Summary

Principal Valuation Results (continued)

Tier 1/Tier 2

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
Normal cost	\$11,311,322	\$11,779,023
Tier 1/Tier 2 valuation payroll	69,810,094	71,017,239
Tier 1/Tier 2 pension normal cost rate	16.20%	16.59%
Tier 1/ Tier 2 Actuarial accrued liability	\$890,605,763	\$853,817,702
Actuarial asset value	652,139,641	668,009,480
Tier 1/Tier 2 Unfunded actuarial accrued liability	238,466,122	185,808,222
Tier 1/ Tier 2 Funded status	73%	78%
Combined valuation payroll	\$140,238,319	\$131,578,857
Tier 1/Tier 2 UAL as a percentage of payroll	170%	141%
Tier 1/Tier 2 UAL rate (includes Multnomah Fire District #10)	5.10%	4.71%
Tier 1/Tier 2 active members ¹	817	884
Tier 1/Tier 2 dormant members	531	565
Tier 1/Tier 2 retirees and beneficiaries	1,956	1,865

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
General service normal cost	\$342.2	\$301.3
OPSRP general service valuation payroll	4,266.9	3,720.4
General service normal cost rate	8.02%	8.10%
Police and fire normal cost	\$69.9	\$59.6
OPSRP police and fire valuation payroll	546.4	462.3
Police and fire normal cost rate	12.79%	12.90%
Actuarial accrued liability	\$3,742.5	\$3,064.1
Actuarial asset value	2,389.1	2,024.6
Unfunded actuarial accrued liability	1,353.5	1,039.5
Funded status	64%	66%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	14%	11%
UAL rate	1.27%	1.01%

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
RHIA		
Normal cost	\$3.3	\$3.5
Tier 1 / Tier 2 valuation payroll	4,730.8	4,933.1
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	\$465.6	\$468.4
Actuarial asset value	419.3	395.9
Unfunded actuarial accrued liability	46.3	72.5
Funded status	90%	85%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	0%	1%
UAL rate	0.43%	0.43%

Side Account Information

Reconciliation of Side Accounts

The following table reconciles the total side account from the beginning of the year to the end of the year. Side account transfers were calculated by PERS and made on a monthly basis. The amount of these transfers is shown in the table below.

All information in this table has been provided by PERS.

	New	Continuing	Total
1. Side account as of December 31, 2014	N/A		
2. Deposits made during 2015		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2015			
5. Side account earnings during 2015			
6. Side account as of December 31, 2015 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2015	December 31, 2014
Side account 1	\$0	\$0
Side account 2	0	0
Side account 3	0	0
Total	\$0	\$0

Development of Side Account Rate

The rate relief attributable to an employer's side account is determined by amortizing the side account balance on the valuation date over a fixed period, and expressing the result as a percentage of combined valuation payroll. For side accounts established prior to December 31, 2009, the fixed period ends December 31, 2027. For side accounts established at a later date, the fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2015	December 31, 2014
1. Total side account	\$0	\$0
2. Combined valuation payroll	140,238,319	131,578,857
3. Average Amortization factor	9.504	10.118
4. Total side account rate (-1. ÷ 2. ÷ 3.)¹	0.00%	0.00%

¹ For employers with more than one side account, the Total Side Account Rate is determined by calculating the rate on each side account separately and adding the rates together.

Tier 1/Tier 2 Valuation Results

Assets

A summary of the market value of pension assets, and reconciliation from the prior year are shown below.

Summary of Market Value of Tier 1/Tier 2 Pension Assets

	December 31, 2015	December 31, 2014
1. Member reserves	\$80,378,783	\$86,013,141
2. Employer reserves	314,742,496	312,885,747
3. Benefits in force reserve	257,018,363	269,110,592
4. Total market value of assets (1. + 2. + 3.)	\$652,139,641	\$668,009,480

The market value of member and employer reserves is provided by PERS. The benefits in force reserve provided by PERS is allocated each year among employers in proportion to their liabilities for retired members and beneficiaries.

Reconciliation of Tier 1/Tier 2 Pension Assets

	December 31, 2014 to December 31, 2015
1. Market value of assets at beginning of year	\$668,009,480
2. Regular employer contributions	13,807,071
3. Benefit payments and expense	(46,739,112)
4. Adjustments ¹	1,598,577
5. Interest credited	15,463,626
6. Total transferred from side accounts	0
7. Market value of assets at end of year (1. + 2. + 3. + 4. + 5. + 6.)	\$652,139,641

¹ Note the adjustment item above includes a reallocation of the benefits in force reserve, transfers to Multnomah Fire District #10, and other adjustments made by PERS.

Tier 1/Tier 2 Valuation Results

Liabilities

Normal Cost

The normal cost represents the value of benefits assigned to the next year of service by the actuarial cost method. If all actuarial assumptions are met, the normal cost represents the amount that would need to be contributed each year to fund plan benefits. Amounts shown below include assumed administrative expenses, which are allocated pro-rata based on normal cost.

Summary of Normal Cost by Tier/Member Classification

	December 31, 2015	December 31, 2014
Tier 1 Police & Fire	\$2,327,914	\$2,356,244
Tier 1 General Service	3,853,036	4,339,907
Tier 2 Police & Fire	2,012,333	1,897,477
Tier 2 General Service	3,118,039	3,185,395
Total	\$11,311,322	\$11,779,023

Change in Tier 1/Tier 2 Normal Cost

The following table shows the impact of the assumption, method, and plan changes on normal cost as of December 31, 2015.

	Before Changes	After Changes	Net Change
Normal Cost	\$11,311,322	\$11,311,322	\$0

Tier 1/Tier 2 Valuation Results

Liabilities

Actuarial Accrued Liability

The actuarial accrued liability represents the value of benefits allocated to service performed before the valuation date by the actuarial cost method. If all actuarial assumptions are met, the actuarial accrued liability represents the amount of assets that would need to be accumulated as of the valuation date to provide for the portion of benefits allocated to service already performed.

Summary of Actuarial Accrued Liability by Tier/Member Classification

	December 31, 2015	December 31, 2014
Active Members		
▪ Tier 1 Police & Fire	\$68,631,049	\$65,025,363
▪ Tier 1 General Service	119,972,366	125,686,191
▪ Tier 2 Police & Fire	35,196,103	30,669,182
▪ Tier 2 General Service	65,471,474	60,979,031
▪ Total Active Members	\$289,270,992	\$282,359,767
Dormant Members	46,382,918	49,390,053
Retired Members and Beneficiaries	554,951,853	522,067,882
Total Actuarial Accrued Liability	\$890,605,763	\$853,817,702

Change in Tier 1/Tier 2 Actuarial Accrued Liability

The following table shows the impact of the assumption, method, and plan changes on the actuarial accrued liability as of December 31, 2015.

	Before Changes	After Changes	Net Change
Actuarial Accrued Liability	\$890,605,763	\$890,605,763	\$0

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Summary of UAL

The UAL represents the difference between the assets accumulated and the liability attributed to prior years of service by the cost method.

	December 31, 2015	December 31, 2014
1. Actuarial accrued liability	\$890,605,763	\$853,817,702
2. Actuarial value of assets	652,139,641	668,009,480
3. Unfunded accrued liability (1. – 2.)	238,466,122	185,808,222
4. Funded percentage (2. ÷ 1.)	73%	78%
5. Combined valuation payroll	\$140,238,319	\$131,578,857
6. Unfunded accrued liability as % of combined valuation payroll (3. ÷ 5.)	170%	141%

Reconciliation of UAL Bases

Beginning with the December 31, 2013 actuarial valuation, each odd-year valuation establishes a 20-year closed-period amortization schedule for outstanding Tier 1/Tier 2 UAL amounts. Amortization schedules are calculated based on the total Tier 1/Tier 2 UAL as of that valuation date less the remaining unamortized balance of previously established Tier 1/Tier 2 UAL bases.

Amortization Base	UAL December 31, 2014	Payment	Interest	UAL December 31, 2015	Next Year's Payment
December 31, 2013	\$73,071,703	\$5,473,536	\$5,261,704	\$72,859,871	\$5,665,179
December 31, 2015	N/A	N/A	N/A	\$165,606,251	\$11,983,086
Total				\$238,466,122	\$17,648,265

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Actuarial Gain or Loss since Prior Valuation

The system-wide actuarial valuation report contains a detailed analysis of gains and losses since the last valuation. The table below shows the gain or loss for the individual employer.

1. Expected actuarial accrued liability	
a. Actuarial accrued liability at December 31, 2014	\$853,817,702
b. Normal cost at December 31, 2014 (excluding assumed expenses)	11,267,361
c. Benefit payments during 2015	(46,378,105)
d. Interest at 7.50% to December 31, 2015	62,719,675
e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)	881,426,633
f. Change in actuarial accrued liability due to assumption, method, and plan changes	0
g. Expected actuarial accrued liability at December 31, 2015 (e. + f.)	881,426,633
2. Actuarial accrued liability at December 31, 2015	890,605,763
3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)	(9,179,130)
4. Expected actuarial value of assets	
a. Actuarial value of assets at December 31, 2014	668,009,480
b. Contributions for 2015 ¹	13,807,071
c. Benefit payments and expenses during 2015	(46,739,112)
d. Interest at 7.50% to December 31, 2015	48,865,759
e. Expected actuarial value of assets at December 31, 2015 (a. + b. + c. + d.)	683,943,198
5. Actuarial value of assets at December 31, 2015	652,139,641
6. Gain/(loss) on actuarial value of assets (5. - 4.e.)	(31,803,556)
7. Total actuarial gain/(loss) (3. + 6.)	(\$40,982,686)

Unfunded Accrued Liability Reconciliation

A reconciliation of the Tier 1/Tier 2 UAL from December 31, 2014 is provided below.

1. UAL at December 31, 2014	\$185,808,222
2. Expected increase	11,675,214
3. Liability (gain)/loss	9,179,130
4. Asset (gain)/loss	31,803,556
5. Change due to changes in assumptions, methods, and plan provisions	0
6. UAL at December 31, 2015 (1. + 2. + 3. + 4. + 5.)	\$238,466,122

¹ Includes rate relief from side accounts.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Normal Cost Rate

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

Development of Tier 1/Tier 2 Normal Cost Rate

	December 31, 2015			December 31, 2014		
	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate
Tier 1 Police & Fire	\$2,327,914	\$11,005,556	21.15%	\$2,356,244	\$10,852,692	21.71%
Tier 1 General Service	3,853,036	23,133,149	16.66%	4,339,907	24,845,308	17.47%
Tier 2 Police & Fire	2,012,333	10,562,307	19.05%	1,897,477	9,936,390	19.10%
Tier 2 General Service	3,118,039	25,109,082	12.42%	3,185,395	25,382,849	12.55%
Total	\$11,311,322	\$69,810,094	16.20%	\$11,779,023	\$71,017,239	16.59%

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Development of Tier 1/Tier 2 UAL Rates

The UAL rate is determined by calculating the next year's scheduled payment to the UAL as a percentage of combined valuation payroll.

	December 31, 2015	December 31, 2014
1. Total Tier 1/Tier 2 UAL	\$238,466,122	\$185,808,222
2. Next year's Tier 1/Tier 2 UAL payment	17,648,265	13,631,027
3. Combined valuation payroll	140,238,319	131,578,857
4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)	12.58%	10.36%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	16.20%	16.59%
b. Tier 1/Tier 2 UAL rate	12.58%	10.36%
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate (a. + b. + c.)	28.93%	27.10%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Adjustments Due to Rate Collar and Minimum Rate Requirements

Employer contribution rates are generally limited to change by no more than the greater of 3 percent of payroll or 20 percent from the current contribution rate. However, if the funded percentage excluding side accounts is below 60 percent or above 140 percent the rate collar doubles in size. If the funded percentage excluding side accounts is between 60 and 70 percent or 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

The table below shows the current contribution rate for the period from July 1, 2015 through June 30, 2017, develops the maximum and minimum contribution rates effective July 1, 2017 based on the collar, and calculates the net adjustment due to the collar and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

1. Current net Tier 1/Tier 2 pension contribution rate		17.75%
2. Employer contribution rate attributable to side accounts		0.00%
3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)		17.75%
4. Size of rate collar		
a. 20% of current employer contribution rate (20% x 3.)		3.55%
b. Preliminary size of rate collar (maximum of 3% or a.)		3.55%
c. Funded percentage		73%
d. Size of rate collar (If c. < 60% or c. > 140%, 2 x b. If c. is 70%-130%, b. Otherwise, a graded rate between b. and 2 x b.)		3.55%
5. July 1, 2017 minimum employer contribution rate	(3. – 4.d. but not < 0%)	14.20%
6. July 1, 2017 maximum employer contribution rate	(3. + 4.d.)	21.30%
7. July 1, 2017 total pension rate, before adjustment		28.93%
8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)		(7.63%)
9. July 1, 2017 Tier 1/Tier 2 UAL rate, before collar		12.58%
10. July 1, 2017 Tier 1/Tier 2 UAL rate, after collar	(8. + 9.)	4.95%
11. July 1, 2017 Tier 1/Tier 2 pension rate, after collar		21.30%
12. Tier 1/Tier 2 retiree healthcare rate		0.50%
13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)		0.00%
14. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment		16.20%
15. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)		16.20%
16. July 1, 2017 Tier 1/Tier 2 pension rate, after minimum adjustment	(11. + 13.)	21.30%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Post-Rate Collar)

The table below summarizes the employer's pension contribution rate for Tier 1 /Tier 2 after adjustments for the rate collar and the 6 percent of payroll minimum employer contribution rate.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	16.20%	16.59%
b. Tier 1/Tier 2 UAL rate	4.95%	4.56%
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate <i>(a. + b. + c., minimum of 5.50%)</i>	21.30%	21.30%

Data

Demographic Information

Employer Valuation Payroll

	General Service	Police & Fire	Total
Tier 1	\$23,133,149	\$11,005,556	\$34,138,705
Tier 2	25,109,082	10,562,307	35,671,389
Tier 1/Tier 2 valuation payroll	48,242,231	21,567,863	69,810,094
OPSRP valuation payroll	52,817,943	17,610,282	70,428,225
Combined valuation payroll	\$101,060,174	\$39,178,145	\$140,238,319

Employer Member Census

	December 31							
	2015				2014			
	Tier 1	Tier 2	OPSRP	Total	Tier 1	Tier 2	OPSRP	Total
Active Members ¹								
General Service	285	338	919	1,542	326	358	846	1,530
Police & Fire	94	100	200	394	99	101	169	369
Total	379	438	1,119	1,936	425	459	1,015	1,899
Active Members with previous service segments with the employer								
General Service	202	178	N/A	380	217	180	N/A	397
Police & Fire	31	35	N/A	66	31	34	N/A	65
Total	233	213	N/A	446	248	214	N/A	462
Dormant Members								
General Service	247	235	145	627	268	245	110	623
Police & Fire	24	25	9	58	26	26	12	64
Total	271	260	154	685	294	271	122	687
Retired Members and Beneficiaries								
General Service	1,449	167	28	1,644	1,409	124	22	1,555
Police & Fire	318	22	4	344	325	7	2	334
Total	1,767	189	32	1,988	1,734	131	24	1,889
Grand Total Number of Members	2,650	1,100	1,305	5,055	2,701	1,075	1,161	4,937

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Data

Demographic Information (continued)

Employer Tier 1/Tier 2 Active Members as of December 31, 2015

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
<20										
20-24										
25-29										
30-34		1	3							4
35-39		3	36	22	1					62
40-44		4	37	66	11					118
45-49		3	30	71	49	9				162
50-54		4	30	57	46	24	3	1		165
55-59			2	19	45	36	23	7	2	134
60-64	1		10	43	32	22	11	3		122
65-69		2	5	19	12	6	1	2		47
70-74					1					1
75+				1	1					2
Total	1	19	170	324	189	84	22	8	0	817

Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2015

Dormant Members			Retired Members and Beneficiaries		
Age	Count	Average Deferred Monthly Benefit	Age	Count	Average Monthly Benefit
<20			<45	4	585
20-24			45-49	11	2,314
25-29	1	113	50-54	43	1,855
30-34	8	374	55-59	133	2,601
35-39	27	482	60-64	381	1,946
40-44	53	947	65-69	557	1,896
45-49	107	1,122	70-74	398	1,978
50-54	79	1,017	75-79	210	1,607
55-59	86	857	80-84	121	1,458
60-64	94	923	85-89	67	1,272
65-69	44	486	90-94	22	1,146
70-74	23	552	95-99	7	622
75+	9	453	100+	2	311
Total	531	876	Total	1,956	1,875

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2015 valuation can be found in the system-wide actuarial valuation report.

Actuarial Methods and Valuation Procedures

A brief summary of the methods used in this valuation is shown below:

<i>Actuarial cost method</i>	Entry Age Normal.
<i>Amortization Method</i>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. Gains and losses between subsequent odd-year valuations will be amortized as a level percentage of projected combined valuation payroll over a closed 20 year period.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.</p>

Economic Assumptions

A brief summary of the key economic assumptions used in this valuation is shown below:

<i>Net investment return</i>	7.50% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.50% compounded annually on members' regular account balances.</p> <p>7.50% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 6.3% in 2016 to 4.4% in 2094.
<i>Administrative Expenses</i>	<p>\$5.5 million added to OPSRP normal cost.</p> <p>\$33.0 million added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2014 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

There were no changes in actuarial methods and allocation procedures since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA actuarial methods and allocation procedures is provided as part of the system-wide valuation report.

Changes in Assumptions

There were no changes in assumptions since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA assumptions is provided as part of the system-wide valuation report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Glossary

Actuarial Accrued Liability

The portion of the present value of prospective benefits allocated to service and compensation before the valuation date in accordance with the actuarial cost method.

Actuarial Asset Value

The value of assets used in calculating the required contributions. The actuarial asset value may be equal to the fair market value of assets, or it may spread the recognition of certain investment gains or losses over a period of years in accordance with an asset valuation method.

Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disablement and retirement; rates of investment earnings and other relevant items.

Actuarial Cost Method

Sometimes called “funding method,” a particular technique used by actuaries to establish the amount and incidence of the annual actuarial cost of pension plan benefits, or normal cost, and the related unfunded actuarial accrued liability. Ordinarily, the annual contribution to the plan comprises the normal cost and an amount for amortization of the unfunded actuarial accrued liability.

Actuarial Gain or (Loss)

A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions, during the period between two actuarial valuation dates, as determined in accordance with a particular actuarial cost method.

Combined Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for both Tier 1/Tier 2 and OPSRP active members. This payroll is used to calculate UAL rates.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

Employer Contribution Rate

Consists of the normal cost rate and the UAL rates, plus adjustments for other items such as side account rate offsets.

Funded Status

The actuarial value of assets expressed as a percentage of the actuarial accrued liability.

Normal Cost

The annual cost allocated to the current year, under the actuarial cost method in use. The normal cost divided by the applicable payroll is the normal cost rate.

OPSRP Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for OPSRP active members. This payroll is used to calculate OPSRP normal cost rates.

Glossary

Pre-SLGRP Liability

The sum of Pre-SLGRP Pooled Liabilities and Transition Liabilities.

Pre-SLGRP Pooled Liability

The difference between the total UAL and the UAL attributable to the SLGRP for a pool of employers that joined the SLGRP. There are currently two pre-SLGRP pools. One was created for State Agencies and Community Colleges when the SLGRP was formed. The other one was created when the Local Government Rate Pool joined the SLGRP.

Present Value

Sometimes called “actuarial present value,” the estimated cost (as of the valuation date) of a series of future payments. The present value is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Rate Collar

A methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution rate and funded status.

Required Supplementary Information (RSI)

Schedules, statistical data, and other information that are an essential part of financial reporting and should be presented with, but are not part of, the basic financial statements of a governmental entity.

Statement No. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions.

Statement No. 68 of the Governmental Accounting Standards Board (GASB 68)

The accounting standard governing a state or local governmental employer’s accounting for pensions for fiscal years beginning after June 15, 2014.

Statement No. 75 of the Governmental Accounting Standards Board (GASB 75)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

The difference between the total UAL and the UAL attributable to the SLGRP for an individual employer that joined the SLGRP or the Local Government Rate Pool.

Unfunded Accrued Liability (UAL)

The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. The UAL is divided by combined valuation payroll and an amortization factor to determine an initial pre-collar UAL rate. The final UAL rate can be adjusted by the rate collar.



Milliman
111 SW Fifth Avenue, Suite 3700
Portland, OR 97204-3654
503 227 0634

This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

September 2016

Clackamas River Water Providers/2870
Oregon Public Employees Retirement System

Dear Sir or Madam:

As part of our engagement with the Oregon Public Employees Retirement Board, we performed a system-wide actuarial valuation of the Oregon Public Employees Retirement System (“PERS” or “the System”) as of December 31, 2015. The attached report, which is an informational supplement to the system-wide report, provides you with employer-specific contribution rates that will become effective July 1, 2017. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information will be provided separately by PERS and is not included in this report.

This report reflects the System's benefit provisions in effect as of December 31, 2015. The full development of the valuation results for the OPSRP and Retiree Health Insurance Account (RHIA) programs can be found in the separate system-wide actuarial valuation report. Costs of the IAP (Individual Account Program) are not included in this or the system-wide actuarial valuation report. Further, costs of pension obligation bond payments are not included in this or the system-wide actuarial valuation report.

If you have any questions about this report, please contact Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, OPSRP general service, and OPSRP police and fire payroll,
- Information to assist you in completing GASB 45 financial reporting requirements, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- Detailed development of Tier 1/Tier 2 valuation results,
- A brief summary of methods and assumptions, and
- A brief summary of any changes in System benefit provisions.

Additional information is provided in the system-wide actuarial valuation report, which is available at www.oregon.gov/PERS/Pages/section/financial_reports/financials.aspx.



September 2016
Clackamas River Water Providers/2870

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the System's staff. This information includes, but is not limited to, System benefit provisions as defined by statute, member census data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for the System have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer a reasonable estimate of anticipated experience affecting the System.

A valuation report is only an estimate of the System's financial condition as of a single date. It can neither predict the System's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of System benefits, only the timing of System contributions. While a valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: System experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the System's funded status); and changes in System benefit provisions or applicable law. Due to the limited scope of this assignment, we did not perform an analysis of the potential range of future measurements. The Board has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in September 2015.

Some of the actuarial computations presented in this report are for purposes of determining the contribution rates effective from July 2017 to June 2019 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.



September 2016
Clackamas River Water Providers/2870

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the System. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

Additional information is provided in the system-wide actuarial valuation report.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Larrabee".

Matt Larrabee, FSA, EA, MAAA
Principal and Consulting Actuary

A handwritten signature in black ink, appearing to read "Scott Preppernau".

Scott Preppernau, FSA, EA, MAAA
Principal and Consulting Actuary



ACTUARIAL VALUATION REPORT DECEMBER 31, 2015

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

INDEPENDENT EMPLOYERS

Clackamas River Water Providers -- #2870

September 2016

CONTENTS

Executive Summary **1**

Employer Contribution Rates 1

Accounting Information 3

Principal Valuation Results 5

 ▪ Employer 5

 ▪ Tier 1/Tier 2 6

 ▪ OPSRP 7

 ▪ Retiree Healthcare 7

Side Account Information **8**

Tier 1/Tier 2 Valuation Results **10**

Assets 10

Liabilities 11

Unfunded Accrued Liability (UAL) 13

Contribution Rate Development 15

Data **20**

Brief Summary of Actuarial Methods and Assumptions **22**

Brief Summary of Changes in Plan Provisions **24**

Glossary **25**

Executive Summary

Milliman has prepared this report for Clackamas River Water Providers to:

- Provide summary December 31, 2015 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2017 through June 30, 2019,
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2015, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45. GASB 68 information will be provided separately by PERS and is not included in this report.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2015 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Clackamas River Water Providers.

Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2017 through June 30, 2019 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

Employer Rates Effective July 1, 2017 for Clackamas River Water Providers

	Payroll		
	Tier 1/Tier 2	OPSRP General Service	Police & Fire
Pension			
Normal cost rate	8.42%	8.02%	12.79%
Tier 1/Tier 2 UAL rate ¹	1.48%	1.48%	1.48%
OPSRP UAL rate	1.27%	1.27%	1.27%
Side account rate relief	0.00%	0.00%	0.00%
Net pension contribution rate	11.17%	10.77%	15.54%
Retiree Healthcare			
Normal cost rate	0.07%	0.00%	0.00%
UAL rate	0.43%	0.43%	0.43%
Net retiree healthcare rate	0.50%	0.43%	0.43%
Total net employer contribution rate	11.67%	11.20%	15.97%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate.

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 Biennium

The rate collar limits changes in contribution rates, but does not limit changes in rates for individual employers related to side accounts. The table below shows the possible minimum and maximum rates first effective as of July 1, 2019, which will depend on the funded status as of December 31, 2017. If the employer's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2015 is 47%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	9.90%	9.90%
Minimum 2019-2021 Rate	6.90%	3.90%
Maximum 2019-2021 Rate	12.90%	15.90%

Executive Summary

Accounting Information

Milliman is not an accounting or audit firm and cannot provide accounting advice. Milliman is not responsible for the interpretation of, or compliance with, accounting standards; citations to, and descriptions of accounting standards provided in this report are for reference purposes only. The information provided in this section is intended to assist the employer in completing its financial statements, but any accounting determination should be reviewed by your auditor.

Pension

In June 2012 the GASB issued Statement No. 68, which replaced GASB 27 and governs employer financial reporting for fiscal years beginning after June 15, 2014. The new standard replaced many of the key elements of the prior reporting requirements. Under the new rules, employers are required to record a balance sheet liability for their unfunded pension obligations. In addition, the timing and coordination of plan and employer reporting has changed under the new requirements. GASB 68 information for employers will be provided separately by PERS and is not included in this report.

Schedule of Funding Progress

Under GASB 27, the Schedule of Funding Progress for Tier 1/Tier 2 pension liabilities was reported in the Required Supplementary Information. This schedule is no longer required now that GASB 68 has replaced GASB 27. However, for additional information and the sake of historical comparison, the updated schedule is shown below for the last several valuations. For employers with side accounts, the actuarial value of assets in this Schedule includes the value of the employer's side accounts.

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (b - a)	Funded Ratio (a ÷ b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a) ÷ c)
12/31/2010	\$0	\$0	\$0	0%	\$0	0%
12/31/2011	5,724	6,294	570	91%	137,485	0%
12/31/2012	10,532	18,085	7,553	58%	144,904	5%
12/31/2013	15,764	25,646	9,882	61%	147,680	7%
12/31/2014	19,485	39,425	19,940	49%	144,239	14%
12/31/2015	24,106	51,168	27,062	47%	150,995	18%

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) is a cost-sharing pool under Statement No. 45 of the Governmental Accounting Standards Board (GASB 45). Consequently, each employer reports the contractually required contribution. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 was calculated as a part of this valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
	Tier 1 / Tier 2	OPSRP	
		General Service	Police & Fire
July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern employer financial reporting for retiree healthcare obligations for fiscal years beginning after June 15, 2017. In general, the changes required by GASB 75 parallel those that occurred for pension reporting when GASB 68 replaced GASB 27. Accounting information for reporting under GASB 75 will be provided separately and is not included in this report.

Executive Summary

Principal Valuation Results

A summary of principal valuation results from the current valuation and the prior valuation follows. Any changes in actuarial assumptions, methods or plan provisions between the two valuations are described later in this report. More detailed information can be found in the system-wide actuarial valuation report.

Clackamas River Water Providers

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
T1/T2 UAL	\$27,062	\$19,940
Allocated pooled OPSRP UAL	21,466	16,490
Side account	0	0
Net unfunded pension actuarial accrued liability	48,528	36,430
Combined valuation payroll	150,995	144,239
Net pension UAL as a percentage of payroll	32%	25%
Calculated side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	\$733	\$1,146

In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer’s combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.

Executive Summary

Principal Valuation Results (continued)

Tier 1/Tier 2

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
Normal cost	\$6,774	\$6,493
Tier 1/Tier 2 valuation payroll	80,457	76,554
Tier 1/Tier 2 pension normal cost rate	8.42%	8.48%
Tier 1/ Tier 2 Actuarial accrued liability	\$51,168	\$39,425
Actuarial asset value	24,106	19,485
Tier 1/Tier 2 Unfunded actuarial accrued liability	27,062	19,940
Tier 1/ Tier 2 Funded status	47%	49%
Combined valuation payroll	\$150,995	\$144,239
Tier 1/Tier 2 UAL as a percentage of payroll	18%	14%
Tier 1/Tier 2 UAL rate (includes Multnomah Fire District #10)	1.48%	1.17%
Tier 1/Tier 2 active members ¹	1	1
Tier 1/Tier 2 dormant members	0	0
Tier 1/Tier 2 retirees and beneficiaries	0	0

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
General service normal cost	\$342.2	\$301.3
OPSRP general service valuation payroll	4,266.9	3,720.4
General service normal cost rate	8.02%	8.10%
Police and fire normal cost	\$69.9	\$59.6
OPSRP police and fire valuation payroll	546.4	462.3
Police and fire normal cost rate	12.79%	12.90%
Actuarial accrued liability	\$3,742.5	\$3,064.1
Actuarial asset value	2,389.1	2,024.6
Unfunded actuarial accrued liability	1,353.5	1,039.5
Funded status	64%	66%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	14%	11%
UAL rate	1.27%	1.01%

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
RHIA		
Normal cost	\$3.3	\$3.5
Tier 1 / Tier 2 valuation payroll	4,730.8	4,933.1
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	\$465.6	\$468.4
Actuarial asset value	419.3	395.9
Unfunded actuarial accrued liability	46.3	72.5
Funded status	90%	85%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	0%	1%
UAL rate	0.43%	0.43%

Side Account Information

Reconciliation of Side Accounts

The following table reconciles the total side account from the beginning of the year to the end of the year. Side account transfers were calculated by PERS and made on a monthly basis. The amount of these transfers is shown in the table below.

All information in this table has been provided by PERS.

	New	Continuing	Total
1. Side account as of December 31, 2014	N/A		
2. Deposits made during 2015		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2015			
5. Side account earnings during 2015			
6. Side account as of December 31, 2015 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2015	December 31, 2014
Side account 1	\$0	\$0
Side account 2	0	0
Side account 3	0	0
Total	\$0	\$0

Development of Side Account Rate

The rate relief attributable to an employer's side account is determined by amortizing the side account balance on the valuation date over a fixed period, and expressing the result as a percentage of combined valuation payroll. For side accounts established prior to December 31, 2009, the fixed period ends December 31, 2027. For side accounts established at a later date, the fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2015	December 31, 2014
1. Total side account	\$0	\$0
2. Combined valuation payroll	150,995	144,239
3. Average Amortization factor	9.504	10.118
4. Total side account rate (-1. ÷ 2. ÷ 3.)¹	0.00%	0.00%

¹ For employers with more than one side account, the Total Side Account Rate is determined by calculating the rate on each side account separately and adding the rates together.

Tier 1/Tier 2 Valuation Results

Assets

A summary of the market value of pension assets, and reconciliation from the prior year are shown below.

Summary of Market Value of Tier 1/Tier 2 Pension Assets

	December 31, 2015	December 31, 2014
1. Member reserves	\$0	\$0
2. Employer reserves	24,106	19,485
3. Benefits in force reserve	0	0
4. Total market value of assets (1. + 2. + 3.)	\$24,106	\$19,485

The market value of member and employer reserves is provided by PERS. The benefits in force reserve provided by PERS is allocated each year among employers in proportion to their liabilities for retired members and beneficiaries.

Reconciliation of Tier 1/Tier 2 Pension Assets

	December 31, 2014 to December 31, 2015
1. Market value of assets at beginning of year	\$19,485
2. Regular employer contributions	4,345
3. Benefit payments and expense	0
4. Adjustments ¹	(172)
5. Interest credited	448
6. Total transferred from side accounts	0
7. Market value of assets at end of year (1. + 2. + 3. + 4. + 5. + 6.)	\$24,106

¹ Note the adjustment item above includes a reallocation of the benefits in force reserve, transfers to Multnomah Fire District #10, and other adjustments made by PERS.

Tier 1/Tier 2 Valuation Results

Liabilities

Normal Cost

The normal cost represents the value of benefits assigned to the next year of service by the actuarial cost method. If all actuarial assumptions are met, the normal cost represents the amount that would need to be contributed each year to fund plan benefits. Amounts shown below include assumed administrative expenses, which are allocated pro-rata based on normal cost.

Summary of Normal Cost by Tier/Member Classification

	December 31, 2015	December 31, 2014
Tier 1 Police & Fire	\$0	\$0
Tier 1 General Service	0	0
Tier 2 Police & Fire	0	0
Tier 2 General Service	6,774	6,493
Total	\$6,774	\$6,493

Change in Tier 1/Tier 2 Normal Cost

The following table shows the impact of the assumption, method, and plan changes on normal cost as of December 31, 2015.

	Before Changes	After Changes	Net Change
Normal Cost	\$6,774	\$6,774	\$0

Tier 1/Tier 2 Valuation Results

Liabilities

Actuarial Accrued Liability

The actuarial accrued liability represents the value of benefits allocated to service performed before the valuation date by the actuarial cost method. If all actuarial assumptions are met, the actuarial accrued liability represents the amount of assets that would need to be accumulated as of the valuation date to provide for the portion of benefits allocated to service already performed.

Summary of Actuarial Accrued Liability by Tier/Member Classification

	December 31, 2015	December 31, 2014
Active Members		
▪ Tier 1 Police & Fire	\$0	\$0
▪ Tier 1 General Service	0	0
▪ Tier 2 Police & Fire	0	0
▪ Tier 2 General Service	51,168	39,425
▪ Total Active Members	\$51,168	\$39,425
Dormant Members	0	0
Retired Members and Beneficiaries	0	0
Total Actuarial Accrued Liability	\$51,168	\$39,425

Change in Tier 1/Tier 2 Actuarial Accrued Liability

The following table shows the impact of the assumption, method, and plan changes on the actuarial accrued liability as of December 31, 2015.

	Before Changes	After Changes	Net Change
Actuarial Accrued Liability	\$51,168	\$51,168	\$0

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Summary of UAL

The UAL represents the difference between the assets accumulated and the liability attributed to prior years of service by the cost method.

	December 31, 2015	December 31, 2014
1. Actuarial accrued liability	\$51,168	\$39,425
2. Actuarial value of assets	24,106	19,485
3. Unfunded accrued liability (1. – 2.)	27,062	19,940
4. Funded percentage (2. ÷ 1.)	47%	49%
5. Combined valuation payroll	\$150,995	\$144,239
6. Unfunded accrued liability as % of combined valuation payroll (3. ÷ 5.)	18%	14%

Reconciliation of UAL Bases

Beginning with the December 31, 2013 actuarial valuation, each odd-year valuation establishes a 20-year closed-period amortization schedule for outstanding Tier 1/Tier 2 UAL amounts. Amortization schedules are calculated based on the total Tier 1/Tier 2 UAL as of that valuation date less the remaining unamortized balance of previously established Tier 1/Tier 2 UAL bases.

Amortization Base	UAL December 31, 2014	Payment	Interest	UAL December 31, 2015	Next Year's Payment
December 31, 2013	\$9,903	\$742	\$713	\$9,874	\$768
December 31, 2015	N/A	N/A	N/A	\$17,188	\$1,244
Total				\$27,062	\$2,012

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Actuarial Gain or Loss since Prior Valuation

The system-wide actuarial valuation report contains a detailed analysis of gains and losses since the last valuation. The table below shows the gain or loss for the individual employer.

1. Expected actuarial accrued liability	
a. Actuarial accrued liability at December 31, 2014	\$39,425
b. Normal cost at December 31, 2014 (excluding assumed expenses)	6,211
c. Benefit payments during 2015	0
d. Interest at 7.50% to December 31, 2015	3,190
e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)	48,826
f. Change in actuarial accrued liability due to assumption, method, and plan changes	0
g. Expected actuarial accrued liability at December 31, 2015 (e. + f.)	48,826
2. Actuarial accrued liability at December 31, 2015	51,168
3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)	(2,342)
4. Expected actuarial value of assets	
a. Actuarial value of assets at December 31, 2014	19,485
b. Contributions for 2015 ¹	4,345
c. Benefit payments and expenses during 2015	0
d. Interest at 7.50% to December 31, 2015	1,624
e. Expected actuarial value of assets at December 31, 2015 (a. + b. + c. + d.)	25,454
5. Actuarial value of assets at December 31, 2015	24,106
6. Gain/(loss) on actuarial value of assets (5. - 4.e.)	(1,348)
7. Total actuarial gain/(loss) (3. + 6.)	(\$3,690)

Unfunded Accrued Liability Reconciliation

A reconciliation of the Tier 1/Tier 2 UAL from December 31, 2014 is provided below.

1. UAL at December 31, 2014	\$19,940
2. Expected increase	3,432
3. Liability (gain)/loss	2,342
4. Asset (gain)/loss	1,348
5. Change due to changes in assumptions, methods, and plan provisions	0
6. UAL at December 31, 2015 (1. + 2. + 3. + 4. + 5.)	\$27,062

¹ Includes rate relief from side accounts.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Normal Cost Rate

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

Development of Tier 1/Tier 2 Normal Cost Rate

	December 31, 2015			December 31, 2014		
	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate
Tier 1 Police & Fire	\$0	\$0	0.00%	\$0	\$0	0.00%
Tier 1 General Service	0	0	0.00%	0	0	0.00%
Tier 2 Police & Fire	0	0	0.00%	0	0	0.00%
Tier 2 General Service	6,774	80,457	8.42%	6,493	76,554	8.48%
Total	\$6,774	\$80,457	8.42%	\$6,493	\$76,554	8.48%

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Development of Tier 1/Tier 2 UAL Rates

The UAL rate is determined by calculating the next year's scheduled payment to the UAL as a percentage of combined valuation payroll.

	December 31, 2015	December 31, 2014
1. Total Tier 1/Tier 2 UAL	\$27,062	\$19,940
2. Next year's Tier 1/Tier 2 UAL payment	2,012	1,468
3. Combined valuation payroll	150,995	144,239
4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)	1.33%	1.02%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	8.42%	8.48%
b. Tier 1/Tier 2 UAL rate	1.33%	1.02%
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate (a. + b. + c.)	9.90%	9.65%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Adjustments Due to Rate Collar and Minimum Rate Requirements

Employer contribution rates are generally limited to change by no more than the greater of 3 percent of payroll or 20 percent from the current contribution rate. However, if the funded percentage excluding side accounts is below 60 percent or above 140 percent the rate collar doubles in size. If the funded percentage excluding side accounts is between 60 and 70 percent or 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

The table below shows the current contribution rate for the period from July 1, 2015 through June 30, 2017, develops the maximum and minimum contribution rates effective July 1, 2017 based on the collar, and calculates the net adjustment due to the collar and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

1. Current net Tier 1/Tier 2 pension contribution rate		7.77%
2. Employer contribution rate attributable to side accounts		0.00%
3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)		7.77%
4. Size of rate collar		
a. 20% of current employer contribution rate (20% x 3.)		1.55%
b. Preliminary size of rate collar (maximum of 3% or a.)		3.00%
c. Funded percentage		47%
d. Size of rate collar (If c. < 60% or c. > 140%, 2 x b. If c. is 70%-130%, b. Otherwise, a graded rate between b. and 2 x b.)		6.00%
5. July 1, 2017 minimum employer contribution rate	(3. – 4.d. but not < 0%)	1.77%
6. July 1, 2017 maximum employer contribution rate	(3. + 4.d.)	13.77%
7. July 1, 2017 total pension rate, before adjustment		9.90%
8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)		0.00%
9. July 1, 2017 Tier 1/Tier 2 UAL rate, before collar		1.33%
10. July 1, 2017 Tier 1/Tier 2 UAL rate, after collar	(8. + 9.)	1.33%
11. July 1, 2017 Tier 1/Tier 2 pension rate, after collar		9.90%
12. Tier 1/Tier 2 retiree healthcare rate		0.50%
13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)		0.00%
14. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment		8.42%
15. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)		8.42%
16. July 1, 2017 Tier 1/Tier 2 pension rate, after minimum adjustment	(11. + 13.)	9.90%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Post-Rate Collar)

The table below summarizes the employer's pension contribution rate for Tier 1 /Tier 2 after adjustments for the rate collar and the 6 percent of payroll minimum employer contribution rate.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	8.42%	8.48%
b. Tier 1/Tier 2 UAL rate	1.33%	1.02%
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate <i>(a. + b. + c., minimum of 5.50%)</i>	9.90%	9.65%

Data

Demographic Information

Employer Valuation Payroll

	General Service	Police & Fire	Total
Tier 1	\$0	\$0	\$0
Tier 2	80,457	0	80,457
Tier 1/Tier 2 valuation payroll	80,457	0	80,457
OPSRP valuation payroll	70,538	0	70,538
Combined valuation payroll	\$150,995	\$0	\$150,995

Employer Member Census

	December 31							
	2015				2014			
	Tier 1	Tier 2	OPSRP	Total	Tier 1	Tier 2	OPSRP	Total
Active Members ¹								
General Service	0	1	1	2	0	1	1	2
Police & Fire	0	0	0	0	0	0	0	0
Total	0	1	1	2	0	1	1	2
Active Members with previous service segments with the employer								
General Service	0	0	N/A	0	0	0	N/A	0
Police & Fire	0	0	N/A	0	0	0	N/A	0
Total	0	0	N/A	0	0	0	N/A	0
Dormant Members								
General Service	0	0	0	0	0	0	0	0
Police & Fire	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0
Retired Members and Beneficiaries								
General Service	0	0	0	0	0	0	0	0
Police & Fire	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0
Grand Total Number of Members	0	1	1	2	0	1	1	2

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Data

Demographic Information (continued)

Employer Tier 1/Tier 2 Active Members as of December 31, 2015

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
<20										
20-24										
25-29										
30-34										
35-39										
40-44										
45-49				1						1
50-54										
55-59										
60-64										
65-69										
70-74										
75+										
Total	0	0	0	1	0	0	0	0	0	1

Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2015

Dormant Members			Retired Members and Beneficiaries		
Age	Count	Average Deferred Monthly Benefit	Age	Count	Average Monthly Benefit
<20			<45		
20-24			45-49		
25-29			50-54		
30-34			55-59		
35-39			60-64		
40-44			65-69		
45-49			70-74		
50-54			75-79		
55-59			80-84		
60-64			85-89		
65-69			90-94		
70-74			95-99		
75+			100+		
Total			Total		

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2015 valuation can be found in the system-wide actuarial valuation report.

Actuarial Methods and Valuation Procedures

A brief summary of the methods used in this valuation is shown below:

<i>Actuarial cost method</i>	Entry Age Normal.
<i>Amortization Method</i>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. Gains and losses between subsequent odd-year valuations will be amortized as a level percentage of projected combined valuation payroll over a closed 20 year period.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.</p>

Economic Assumptions

A brief summary of the key economic assumptions used in this valuation is shown below:

<i>Net investment return</i>	7.50% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.50% compounded annually on members' regular account balances.</p> <p>7.50% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 6.3% in 2016 to 4.4% in 2094.
<i>Administrative Expenses</i>	<p>\$5.5 million added to OPSRP normal cost.</p> <p>\$33.0 million added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2014 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

There were no changes in actuarial methods and allocation procedures since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA actuarial methods and allocation procedures is provided as part of the system-wide valuation report.

Changes in Assumptions

There were no changes in assumptions since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA assumptions is provided as part of the system-wide valuation report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Glossary

Actuarial Accrued Liability

The portion of the present value of prospective benefits allocated to service and compensation before the valuation date in accordance with the actuarial cost method.

Actuarial Asset Value

The value of assets used in calculating the required contributions. The actuarial asset value may be equal to the fair market value of assets, or it may spread the recognition of certain investment gains or losses over a period of years in accordance with an asset valuation method.

Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disablement and retirement; rates of investment earnings and other relevant items.

Actuarial Cost Method

Sometimes called “funding method,” a particular technique used by actuaries to establish the amount and incidence of the annual actuarial cost of pension plan benefits, or normal cost, and the related unfunded actuarial accrued liability. Ordinarily, the annual contribution to the plan comprises the normal cost and an amount for amortization of the unfunded actuarial accrued liability.

Actuarial Gain or (Loss)

A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions, during the period between two actuarial valuation dates, as determined in accordance with a particular actuarial cost method.

Combined Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for both Tier 1/Tier 2 and OPSRP active members. This payroll is used to calculate UAL rates.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

Employer Contribution Rate

Consists of the normal cost rate and the UAL rates, plus adjustments for other items such as side account rate offsets.

Funded Status

The actuarial value of assets expressed as a percentage of the actuarial accrued liability.

Normal Cost

The annual cost allocated to the current year, under the actuarial cost method in use. The normal cost divided by the applicable payroll is the normal cost rate.

OPSRP Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for OPSRP active members. This payroll is used to calculate OPSRP normal cost rates.

Glossary

Pre-SLGRP Liability

The sum of Pre-SLGRP Pooled Liabilities and Transition Liabilities.

Pre-SLGRP Pooled Liability

The difference between the total UAL and the UAL attributable to the SLGRP for a pool of employers that joined the SLGRP. There are currently two pre-SLGRP pools. One was created for State Agencies and Community Colleges when the SLGRP was formed. The other one was created when the Local Government Rate Pool joined the SLGRP.

Present Value

Sometimes called “actuarial present value,” the estimated cost (as of the valuation date) of a series of future payments. The present value is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Rate Collar

A methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution rate and funded status.

Required Supplementary Information (RSI)

Schedules, statistical data, and other information that are an essential part of financial reporting and should be presented with, but are not part of, the basic financial statements of a governmental entity.

Statement No. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions.

Statement No. 68 of the Governmental Accounting Standards Board (GASB 68)

The accounting standard governing a state or local governmental employer’s accounting for pensions for fiscal years beginning after June 15, 2014.

Statement No. 75 of the Governmental Accounting Standards Board (GASB 75)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

The difference between the total UAL and the UAL attributable to the SLGRP for an individual employer that joined the SLGRP or the Local Government Rate Pool.

Unfunded Accrued Liability (UAL)

The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. The UAL is divided by combined valuation payroll and an amortization factor to determine an initial pre-collar UAL rate. The final UAL rate can be adjusted by the rate collar.



Milliman
111 SW Fifth Avenue, Suite 3700
Portland, OR 97204-3654
503 227 0634

This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

September 2016

City of Clatskanie/2162
Oregon Public Employees Retirement System

Dear Sir or Madam:

As part of our engagement with the Oregon Public Employees Retirement Board, we performed a system-wide actuarial valuation of the Oregon Public Employees Retirement System (“PERS” or “the System”) as of December 31, 2015. The attached report, which is an informational supplement to the system-wide report, provides you with employer-specific contribution rates that will become effective July 1, 2017. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information will be provided separately by PERS and is not included in this report.

This report reflects the System's benefit provisions in effect as of December 31, 2015. The full development of the valuation results for the OPSRP and Retiree Health Insurance Account (RHIA) programs can be found in the separate system-wide actuarial valuation report. Costs of the IAP (Individual Account Program) are not included in this or the system-wide actuarial valuation report. Further, costs of pension obligation bond payments are not included in this or the system-wide actuarial valuation report.

If you have any questions about this report, please contact Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, OPSRP general service, and OPSRP police and fire payroll,
- Information to assist you in completing GASB 45 financial reporting requirements, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- Detailed development of Tier 1/Tier 2 valuation results,
- A brief summary of methods and assumptions, and
- A brief summary of any changes in System benefit provisions.

Additional information is provided in the system-wide actuarial valuation report, which is available at www.oregon.gov/PERS/Pages/section/financial_reports/financials.aspx.

September 2016
City of Clatskanie/2162

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the System's staff. This information includes, but is not limited to, System benefit provisions as defined by statute, member census data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for the System have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer a reasonable estimate of anticipated experience affecting the System.

A valuation report is only an estimate of the System's financial condition as of a single date. It can neither predict the System's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of System benefits, only the timing of System contributions. While a valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: System experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the System's funded status); and changes in System benefit provisions or applicable law. Due to the limited scope of this assignment, we did not perform an analysis of the potential range of future measurements. The Board has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in September 2015.

Some of the actuarial computations presented in this report are for purposes of determining the contribution rates effective from July 2017 to June 2019 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.



September 2016
City of Clatskanie/2162

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the System. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

Additional information is provided in the system-wide actuarial valuation report.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Larrabee".

Matt Larrabee, FSA, EA, MAAA
Principal and Consulting Actuary

A handwritten signature in black ink, appearing to read "Scott Preppernau".

Scott Preppernau, FSA, EA, MAAA
Principal and Consulting Actuary



ACTUARIAL VALUATION REPORT DECEMBER 31, 2015

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

INDEPENDENT EMPLOYERS

City of Clatskanie -- #2162

September 2016

CONTENTS

Executive Summary **1**

Employer Contribution Rates 1

Accounting Information 3

Principal Valuation Results 5

 ▪ Employer 5

 ▪ Tier 1/Tier 2 6

 ▪ OPSRP 7

 ▪ Retiree Healthcare 7

Side Account Information **8**

Tier 1/Tier 2 Valuation Results **10**

Assets 10

Liabilities 11

Unfunded Accrued Liability (UAL) 13

Contribution Rate Development 15

Data **20**

Brief Summary of Actuarial Methods and Assumptions **22**

Brief Summary of Changes in Plan Provisions **24**

Glossary **25**

Executive Summary

Milliman has prepared this report for City of Clatskanie to:

- Provide summary December 31, 2015 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2017 through June 30, 2019,
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2015, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45. GASB 68 information will be provided separately by PERS and is not included in this report.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2015 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to City of Clatskanie.

Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2017 through June 30, 2019 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

Employer Rates Effective July 1, 2017 for City of Clatskanie

	Payroll		
	Tier 1/Tier 2	OPSRP General Service	OPSRP Police & Fire
Pension			
Normal cost rate	16.40%	8.02%	12.79%
Tier 1/Tier 2 UAL rate ¹	1.26%	1.26%	1.26%
OPSRP UAL rate	1.27%	1.27%	1.27%
Side account rate relief	0.00%	0.00%	0.00%
Net pension contribution rate	18.93%	10.55%	15.32%
Retiree Healthcare			
Normal cost rate	0.07%	0.00%	0.00%
UAL rate	0.43%	0.43%	0.43%
Net retiree healthcare rate	0.50%	0.43%	0.43%
Total net employer contribution rate	19.43%	10.98%	15.75%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate.

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 Biennium

The rate collar limits changes in contribution rates, but does not limit changes in rates for individual employers related to side accounts. The table below shows the possible minimum and maximum rates first effective as of July 1, 2019, which will depend on the funded status as of December 31, 2017. If the employer's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2015 is 70%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	17.66%	17.66%
Minimum 2019-2021 Rate	14.13%	10.60%
Maximum 2019-2021 Rate	21.19%	24.72%

Executive Summary

Accounting Information

Milliman is not an accounting or audit firm and cannot provide accounting advice. Milliman is not responsible for the interpretation of, or compliance with, accounting standards; citations to, and descriptions of accounting standards provided in this report are for reference purposes only. The information provided in this section is intended to assist the employer in completing its financial statements, but any accounting determination should be reviewed by your auditor.

Pension

In June 2012 the GASB issued Statement No. 68, which replaced GASB 27 and governs employer financial reporting for fiscal years beginning after June 15, 2014. The new standard replaced many of the key elements of the prior reporting requirements. Under the new rules, employers are required to record a balance sheet liability for their unfunded pension obligations. In addition, the timing and coordination of plan and employer reporting has changed under the new requirements. GASB 68 information for employers will be provided separately by PERS and is not included in this report.

Schedule of Funding Progress

Under GASB 27, the Schedule of Funding Progress for Tier 1/Tier 2 pension liabilities was reported in the Required Supplementary Information. This schedule is no longer required now that GASB 68 has replaced GASB 27. However, for additional information and the sake of historical comparison, the updated schedule is shown below for the last several valuations. For employers with side accounts, the actuarial value of assets in this Schedule includes the value of the employer's side accounts.

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (b - a)	Funded Ratio (a ÷ b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a) ÷ c)
12/31/2010	\$6,665,662	\$7,626,631	\$960,969	87%	\$987,654	97%
12/31/2011	6,731,192	8,033,650	1,302,458	84%	1,019,475	128%
12/31/2012	7,442,100	7,822,198	380,098	95%	872,808	44%
12/31/2013	6,150,130	7,105,945	955,815	87%	814,163	117%
12/31/2014	6,181,484	8,189,911	2,008,427	75%	967,961	207%
12/31/2015	5,868,422	8,367,608	2,499,186	70%	958,127	261%

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) is a cost-sharing pool under Statement No. 45 of the Governmental Accounting Standards Board (GASB 45). Consequently, each employer reports the contractually required contribution. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 was calculated as a part of this valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
	Tier 1 / Tier 2	OPSRP	
		General Service	Police & Fire
July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern employer financial reporting for retiree healthcare obligations for fiscal years beginning after June 15, 2017. In general, the changes required by GASB 75 parallel those that occurred for pension reporting when GASB 68 replaced GASB 27. Accounting information for reporting under GASB 75 will be provided separately and is not included in this report.

Executive Summary

Principal Valuation Results

A summary of principal valuation results from the current valuation and the prior valuation follows. Any changes in actuarial assumptions, methods or plan provisions between the two valuations are described later in this report. More detailed information can be found in the system-wide actuarial valuation report.

City of Clatskanie

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
T1/T2 UAL	\$2,499,186	\$2,008,427
Allocated pooled OPSRP UAL	136,211	110,659
Side account	0	0
Net unfunded pension actuarial accrued liability	2,635,397	2,119,086
Combined valuation payroll	958,127	967,961
Net pension UAL as a percentage of payroll	275%	219%
Calculated side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	\$4,652	\$7,694

In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer’s combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.

Executive Summary

Principal Valuation Results (continued)

Tier 1/Tier 2

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
Normal cost	\$56,394	\$55,509
Tier 1/Tier 2 valuation payroll	343,890	337,240
Tier 1/Tier 2 pension normal cost rate	16.40%	16.46%
Tier 1/ Tier 2 Actuarial accrued liability	\$8,367,608	\$8,189,911
Actuarial asset value	5,868,422	6,181,484
Tier 1/Tier 2 Unfunded actuarial accrued liability	2,499,186	2,008,427
Tier 1/ Tier 2 Funded status	70%	75%
Combined valuation payroll	\$958,127	\$967,961
Tier 1/Tier 2 UAL as a percentage of payroll	261%	207%
Tier 1/Tier 2 UAL rate (includes Multnomah Fire District #10)	1.26%	1.20%
Tier 1/Tier 2 active members ¹	5	5
Tier 1/Tier 2 dormant members	3	3
Tier 1/Tier 2 retirees and beneficiaries	23	22

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
General service normal cost	\$342.2	\$301.3
OPSRP general service valuation payroll	4,266.9	3,720.4
General service normal cost rate	8.02%	8.10%
Police and fire normal cost	\$69.9	\$59.6
OPSRP police and fire valuation payroll	546.4	462.3
Police and fire normal cost rate	12.79%	12.90%
Actuarial accrued liability	\$3,742.5	\$3,064.1
Actuarial asset value	2,389.1	2,024.6
Unfunded actuarial accrued liability	1,353.5	1,039.5
Funded status	64%	66%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	14%	11%
UAL rate	1.27%	1.01%

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
RHIA		
Normal cost	\$3.3	\$3.5
Tier 1 / Tier 2 valuation payroll	4,730.8	4,933.1
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	\$465.6	\$468.4
Actuarial asset value	419.3	395.9
Unfunded actuarial accrued liability	46.3	72.5
Funded status	90%	85%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	0%	1%
UAL rate	0.43%	0.43%

Side Account Information

Reconciliation of Side Accounts

The following table reconciles the total side account from the beginning of the year to the end of the year. Side account transfers were calculated by PERS and made on a monthly basis. The amount of these transfers is shown in the table below.

All information in this table has been provided by PERS.

	New	Continuing	Total
1. Side account as of December 31, 2014	N/A		
2. Deposits made during 2015		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2015			
5. Side account earnings during 2015			
6. Side account as of December 31, 2015 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2015	December 31, 2014
Side account 1	\$0	\$0
Side account 2	0	0
Side account 3	0	0
Total	\$0	\$0

Development of Side Account Rate

The rate relief attributable to an employer's side account is determined by amortizing the side account balance on the valuation date over a fixed period, and expressing the result as a percentage of combined valuation payroll. For side accounts established prior to December 31, 2009, the fixed period ends December 31, 2027. For side accounts established at a later date, the fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2015	December 31, 2014
1. Total side account	\$0	\$0
2. Combined valuation payroll	958,127	967,961
3. Average Amortization factor	9.504	10.118
4. Total side account rate (-1. ÷ 2. ÷ 3.)¹	0.00%	0.00%

¹ For employers with more than one side account, the Total Side Account Rate is determined by calculating the rate on each side account separately and adding the rates together.

Tier 1/Tier 2 Valuation Results

Assets

A summary of the market value of pension assets, and reconciliation from the prior year are shown below.

Summary of Market Value of Tier 1/Tier 2 Pension Assets

	December 31, 2015	December 31, 2014
1. Member reserves	\$387,831	\$360,000
2. Employer reserves	2,326,643	2,340,312
3. Benefits in force reserve	3,153,948	3,481,172
4. Total market value of assets (1. + 2. + 3.)	\$5,868,422	\$6,181,484

The market value of member and employer reserves is provided by PERS. The benefits in force reserve provided by PERS is allocated each year among employers in proportion to their liabilities for retired members and beneficiaries.

Reconciliation of Tier 1/Tier 2 Pension Assets

	December 31, 2014 to December 31, 2015
1. Market value of assets at beginning of year	\$6,181,484
2. Regular employer contributions	52,005
3. Benefit payments and expense	(573,549)
4. Adjustments ¹	83,205
5. Interest credited	125,277
6. Total transferred from side accounts	0
7. Market value of assets at end of year (1. + 2. + 3. + 4. + 5. + 6.)	\$5,868,422

¹ Note the adjustment item above includes a reallocation of the benefits in force reserve, transfers to Multnomah Fire District #10, and other adjustments made by PERS.

Tier 1/Tier 2 Valuation Results

Liabilities

Normal Cost

The normal cost represents the value of benefits assigned to the next year of service by the actuarial cost method. If all actuarial assumptions are met, the normal cost represents the amount that would need to be contributed each year to fund plan benefits. Amounts shown below include assumed administrative expenses, which are allocated pro-rata based on normal cost.

Summary of Normal Cost by Tier/Member Classification

	December 31, 2015	December 31, 2014
Tier 1 Police & Fire	\$0	\$0
Tier 1 General Service	8,401	8,100
Tier 2 Police & Fire	14,949	15,495
Tier 2 General Service	33,044	31,914
Total	\$56,394	\$55,509

Change in Tier 1/Tier 2 Normal Cost

The following table shows the impact of the assumption, method, and plan changes on normal cost as of December 31, 2015.

	Before Changes	After Changes	Net Change
Normal Cost	\$56,394	\$56,394	\$0

Tier 1/Tier 2 Valuation Results

Liabilities

Actuarial Accrued Liability

The actuarial accrued liability represents the value of benefits allocated to service performed before the valuation date by the actuarial cost method. If all actuarial assumptions are met, the actuarial accrued liability represents the amount of assets that would need to be accumulated as of the valuation date to provide for the portion of benefits allocated to service already performed.

Summary of Actuarial Accrued Liability by Tier/Member Classification

	December 31, 2015	December 31, 2014
Active Members		
▪ Tier 1 Police & Fire	\$194,183	\$179,209
▪ Tier 1 General Service	605,391	561,851
▪ Tier 2 Police & Fire	308,482	298,307
▪ Tier 2 General Service	275,094	235,312
▪ Total Active Members	\$1,383,150	\$1,274,679
Dormant Members	174,482	161,845
Retired Members and Beneficiaries	6,809,976	6,753,387
Total Actuarial Accrued Liability	\$8,367,608	\$8,189,911

Change in Tier 1/Tier 2 Actuarial Accrued Liability

The following table shows the impact of the assumption, method, and plan changes on the actuarial accrued liability as of December 31, 2015.

	Before Changes	After Changes	Net Change
Actuarial Accrued Liability	\$8,367,608	\$8,367,608	\$0

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Summary of UAL

The UAL represents the difference between the assets accumulated and the liability attributed to prior years of service by the cost method.

	December 31, 2015	December 31, 2014
1. Actuarial accrued liability	\$8,367,608	\$8,189,911
2. Actuarial value of assets	5,868,422	6,181,484
3. Unfunded accrued liability (1. – 2.)	2,499,186	2,008,427
4. Funded percentage (2. ÷ 1.)	70%	75%
5. Combined valuation payroll	\$958,127	\$967,961
6. Unfunded accrued liability as % of combined valuation payroll (3. ÷ 5.)	261%	207%

Reconciliation of UAL Bases

Beginning with the December 31, 2013 actuarial valuation, each odd-year valuation establishes a 20-year closed-period amortization schedule for outstanding Tier 1/Tier 2 UAL amounts. Amortization schedules are calculated based on the total Tier 1/Tier 2 UAL as of that valuation date less the remaining unamortized balance of previously established Tier 1/Tier 2 UAL bases.

Amortization Base	UAL December 31, 2014	Payment	Interest	UAL December 31, 2015	Next Year's Payment
December 31, 2013	\$957,854	\$71,749	\$68,973	\$955,078	\$74,262
December 31, 2015	N/A	N/A	N/A	\$1,544,108	\$111,730
Total				\$2,499,186	\$185,992

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Actuarial Gain or Loss since Prior Valuation

The system-wide actuarial valuation report contains a detailed analysis of gains and losses since the last valuation. The table below shows the gain or loss for the individual employer.

1. Expected actuarial accrued liability	
a. Actuarial accrued liability at December 31, 2014	\$8,189,911
b. Normal cost at December 31, 2014 (excluding assumed expenses)	53,098
c. Benefit payments during 2015	(569,119)
d. Interest at 7.50% to December 31, 2015	594,893
e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)	8,268,783
f. Change in actuarial accrued liability due to assumption, method, and plan changes	0
g. Expected actuarial accrued liability at December 31, 2015 (e. + f.)	8,268,783
2. Actuarial accrued liability at December 31, 2015	8,367,608
3. Gain/(loss) on actuarial accrued liability (1.g. – 2.)	(98,825)
4. Expected actuarial value of assets	
a. Actuarial value of assets at December 31, 2014	6,181,484
b. Contributions for 2015 ¹	52,005
c. Benefit payments and expenses during 2015	(573,549)
d. Interest at 7.50% to December 31, 2015	444,053
e. Expected actuarial value of assets at December 31, 2015 (a. + b. + c. + d.)	6,103,993
5. Actuarial value of assets at December 31, 2015	5,868,422
6. Gain/(loss) on actuarial value of assets (5. - 4.e.)	(235,572)
7. Total actuarial gain/(loss) (3. + 6.)	(\$334,397)

Unfunded Accrued Liability Reconciliation

A reconciliation of the Tier 1/Tier 2 UAL from December 31, 2014 is provided below.

1. UAL at December 31, 2014	\$2,008,427
2. Expected increase	156,362
3. Liability (gain)/loss	98,825
4. Asset (gain)/loss	235,572
5. Change due to changes in assumptions, methods, and plan provisions	0
6. UAL at December 31, 2015 (1. + 2. + 3. + 4. + 5.)	\$2,499,186

¹ Includes rate relief from side accounts.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Normal Cost Rate

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

Development of Tier 1/Tier 2 Normal Cost Rate

	December 31, 2015			December 31, 2014		
	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate
Tier 1 Police & Fire	\$0	\$0	0.00%	\$0	\$0	0.00%
Tier 1 General Service	8,401	50,431	16.66%	8,100	49,292	16.43%
Tier 2 Police & Fire	14,949	76,124	19.64%	15,495	79,746	19.43%
Tier 2 General Service	33,044	217,335	15.20%	31,914	208,202	15.33%
Total	\$56,394	\$343,890	16.40%	\$55,509	\$337,240	16.46%

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Development of Tier 1/Tier 2 UAL Rates

The UAL rate is determined by calculating the next year's scheduled payment to the UAL as a percentage of combined valuation payroll.

	December 31, 2015	December 31, 2014
1. Total Tier 1/Tier 2 UAL	\$2,499,186	\$2,008,427
2. Next year's Tier 1/Tier 2 UAL payment	185,992	147,767
3. Combined valuation payroll	958,127	967,961
4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)	19.41%	15.27%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	16.40%	16.46%
b. Tier 1/Tier 2 UAL rate	19.41%	15.27%
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate (a. + b. + c.)	35.96%	31.88%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Adjustments Due to Rate Collar and Minimum Rate Requirements

Employer contribution rates are generally limited to change by no more than the greater of 3 percent of payroll or 20 percent from the current contribution rate. However, if the funded percentage excluding side accounts is below 60 percent or above 140 percent the rate collar doubles in size. If the funded percentage excluding side accounts is between 60 and 70 percent or 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

The table below shows the current contribution rate for the period from July 1, 2015 through June 30, 2017, develops the maximum and minimum contribution rates effective July 1, 2017 based on the collar, and calculates the net adjustment due to the collar and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

1. Current net Tier 1/Tier 2 pension contribution rate		14.66%
2. Employer contribution rate attributable to side accounts		0.00%
3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)		14.66%
4. Size of rate collar		
a. 20% of current employer contribution rate (20% x 3.)		2.93%
b. Preliminary size of rate collar (maximum of 3% or a.)		3.00%
c. Funded percentage		70%
d. Size of rate collar (If c. < 60% or c. > 140%, 2 x b. If c. is 70%-130%, b. Otherwise, a graded rate between b. and 2 x b.)		3.00%
5. July 1, 2017 minimum employer contribution rate	(3. – 4.d. but not < 0%)	11.66%
6. July 1, 2017 maximum employer contribution rate	(3. + 4.d.)	17.66%
7. July 1, 2017 total pension rate, before adjustment		35.96%
8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)		(18.30%)
9. July 1, 2017 Tier 1/Tier 2 UAL rate, before collar		19.41%
10. July 1, 2017 Tier 1/Tier 2 UAL rate, after collar	(8. + 9.)	1.11%
11. July 1, 2017 Tier 1/Tier 2 pension rate, after collar		17.66%
12. Tier 1/Tier 2 retiree healthcare rate		0.50%
13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)		0.00%
14. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment		16.40%
15. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)		16.40%
16. July 1, 2017 Tier 1/Tier 2 pension rate, after minimum adjustment	(11. + 13.)	17.66%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Post-Rate Collar)

The table below summarizes the employer's pension contribution rate for Tier 1 /Tier 2 after adjustments for the rate collar and the 6 percent of payroll minimum employer contribution rate.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	16.40%	16.46%
b. Tier 1/Tier 2 UAL rate	1.11%	1.05%
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate <i>(a. + b. + c., minimum of 5.50%)</i>	17.66%	17.66%

Data

Demographic Information

Employer Valuation Payroll

	General Service	Police & Fire	Total
Tier 1	\$50,431	\$0	\$50,431
Tier 2	217,335	76,124	293,459
Tier 1/Tier 2 valuation payroll	267,766	76,124	343,890
OPSRP valuation payroll	391,711	222,526	614,237
Combined valuation payroll	\$659,477	\$298,650	\$958,127

Employer Member Census

	December 31							
	2015				2014			
	Tier 1	Tier 2	OPSRP	Total	Tier 1	Tier 2	OPSRP	Total
Active Members ¹								
General Service	1	3	6	10	1	3	7	11
Police & Fire	0	1	4	5	0	1	3	4
Total	1	4	10	15	1	4	10	15
Active Members with previous service segments with the employer								
General Service	2	0	N/A	2	2	0	N/A	2
Police & Fire	3	0	N/A	3	4	0	N/A	4
Total	5	0	N/A	5	6	0	N/A	6
Dormant Members								
General Service	0	0	0	0	0	0	0	0
Police & Fire	3	0	0	3	3	0	0	3
Total	3	0	0	3	3	0	0	3
Retired Members and Beneficiaries								
General Service	12	1	0	13	13	0	0	13
Police & Fire	9	1	0	10	8	1	0	9
Total	21	2	0	23	21	1	0	22
Grand Total Number of Members	30	6	10	46	31	5	10	46

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Data

Demographic Information (continued)

Employer Tier 1/Tier 2 Active Members as of December 31, 2015

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
<20										
20-24										
25-29										
30-34										
35-39										
40-44										
45-49				1						1
50-54			1							1
55-59			1							1
60-64				1	1					2
65-69										
70-74										
75+										
Total	0	0	2	2	1	0	0	0	0	5

Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2015

Dormant Members			Retired Members and Beneficiaries		
Age	Count	Average Deferred Monthly Benefit	Age	Count	Average Monthly Benefit
<20			<45	1	2,886
20-24			45-49	1	114
25-29			50-54	2	1,658
30-34			55-59	3	1,446
35-39			60-64	3	3,212
40-44			65-69	7	2,157
45-49	2	117	70-74	3	745
50-54	1	942	75-79	1	637
55-59			80-84	1	15
60-64			85-89	1	1,957
65-69			90-94		
70-74			95-99		
75+			100+		
Total	3	392	Total	23	1,749

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2015 valuation can be found in the system-wide actuarial valuation report.

Actuarial Methods and Valuation Procedures

A brief summary of the methods used in this valuation is shown below:

<i>Actuarial cost method</i>	Entry Age Normal.
<i>Amortization Method</i>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. Gains and losses between subsequent odd-year valuations will be amortized as a level percentage of projected combined valuation payroll over a closed 20 year period.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.</p>

Economic Assumptions

A brief summary of the key economic assumptions used in this valuation is shown below:

<i>Net investment return</i>	7.50% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.50% compounded annually on members' regular account balances.</p> <p>7.50% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 6.3% in 2016 to 4.4% in 2094.
<i>Administrative Expenses</i>	<p>\$5.5 million added to OPSRP normal cost.</p> <p>\$33.0 million added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2014 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

There were no changes in actuarial methods and allocation procedures since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA actuarial methods and allocation procedures is provided as part of the system-wide valuation report.

Changes in Assumptions

There were no changes in assumptions since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA assumptions is provided as part of the system-wide valuation report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Glossary

Actuarial Accrued Liability

The portion of the present value of prospective benefits allocated to service and compensation before the valuation date in accordance with the actuarial cost method.

Actuarial Asset Value

The value of assets used in calculating the required contributions. The actuarial asset value may be equal to the fair market value of assets, or it may spread the recognition of certain investment gains or losses over a period of years in accordance with an asset valuation method.

Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disablement and retirement; rates of investment earnings and other relevant items.

Actuarial Cost Method

Sometimes called “funding method,” a particular technique used by actuaries to establish the amount and incidence of the annual actuarial cost of pension plan benefits, or normal cost, and the related unfunded actuarial accrued liability. Ordinarily, the annual contribution to the plan comprises the normal cost and an amount for amortization of the unfunded actuarial accrued liability.

Actuarial Gain or (Loss)

A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions, during the period between two actuarial valuation dates, as determined in accordance with a particular actuarial cost method.

Combined Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for both Tier 1/Tier 2 and OPSRP active members. This payroll is used to calculate UAL rates.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

Employer Contribution Rate

Consists of the normal cost rate and the UAL rates, plus adjustments for other items such as side account rate offsets.

Funded Status

The actuarial value of assets expressed as a percentage of the actuarial accrued liability.

Normal Cost

The annual cost allocated to the current year, under the actuarial cost method in use. The normal cost divided by the applicable payroll is the normal cost rate.

OPSRP Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for OPSRP active members. This payroll is used to calculate OPSRP normal cost rates.

Glossary

Pre-SLGRP Liability

The sum of Pre-SLGRP Pooled Liabilities and Transition Liabilities.

Pre-SLGRP Pooled Liability

The difference between the total UAL and the UAL attributable to the SLGRP for a pool of employers that joined the SLGRP. There are currently two pre-SLGRP pools. One was created for State Agencies and Community Colleges when the SLGRP was formed. The other one was created when the Local Government Rate Pool joined the SLGRP.

Present Value

Sometimes called “actuarial present value,” the estimated cost (as of the valuation date) of a series of future payments. The present value is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Rate Collar

A methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution rate and funded status.

Required Supplementary Information (RSI)

Schedules, statistical data, and other information that are an essential part of financial reporting and should be presented with, but are not part of, the basic financial statements of a governmental entity.

Statement No. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions.

Statement No. 68 of the Governmental Accounting Standards Board (GASB 68)

The accounting standard governing a state or local governmental employer’s accounting for pensions for fiscal years beginning after June 15, 2014.

Statement No. 75 of the Governmental Accounting Standards Board (GASB 75)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

The difference between the total UAL and the UAL attributable to the SLGRP for an individual employer that joined the SLGRP or the Local Government Rate Pool.

Unfunded Accrued Liability (UAL)

The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. The UAL is divided by combined valuation payroll and an amortization factor to determine an initial pre-collar UAL rate. The final UAL rate can be adjusted by the rate collar.



Milliman
111 SW Fifth Avenue, Suite 3700
Portland, OR 97204-3654
503 227 0634

This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

September 2016

Columbia River Public Utility District/2679
Oregon Public Employees Retirement System

Dear Sir or Madam:

As part of our engagement with the Oregon Public Employees Retirement Board, we performed a system-wide actuarial valuation of the Oregon Public Employees Retirement System (“PERS” or “the System”) as of December 31, 2015. The attached report, which is an informational supplement to the system-wide report, provides you with employer-specific contribution rates that will become effective July 1, 2017. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information will be provided separately by PERS and is not included in this report.

This report reflects the System's benefit provisions in effect as of December 31, 2015. The full development of the valuation results for the OPSRP and Retiree Health Insurance Account (RHIA) programs can be found in the separate system-wide actuarial valuation report. Costs of the IAP (Individual Account Program) are not included in this or the system-wide actuarial valuation report. Further, costs of pension obligation bond payments are not included in this or the system-wide actuarial valuation report.

If you have any questions about this report, please contact Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, OPSRP general service, and OPSRP police and fire payroll,
- Information to assist you in completing GASB 45 financial reporting requirements, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- Detailed development of Tier 1/Tier 2 valuation results,
- A brief summary of methods and assumptions, and
- A brief summary of any changes in System benefit provisions.

Additional information is provided in the system-wide actuarial valuation report, which is available at www.oregon.gov/PERS/Pages/section/financial_reports/financials.aspx.



September 2016
Columbia River Public Utility District/2679

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the System's staff. This information includes, but is not limited to, System benefit provisions as defined by statute, member census data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for the System have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer a reasonable estimate of anticipated experience affecting the System.

A valuation report is only an estimate of the System's financial condition as of a single date. It can neither predict the System's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of System benefits, only the timing of System contributions. While a valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: System experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the System's funded status); and changes in System benefit provisions or applicable law. Due to the limited scope of this assignment, we did not perform an analysis of the potential range of future measurements. The Board has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in September 2015.

Some of the actuarial computations presented in this report are for purposes of determining the contribution rates effective from July 2017 to June 2019 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.



September 2016
Columbia River Public Utility District/2679

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the System. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

Additional information is provided in the system-wide actuarial valuation report.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Larrabee".

Matt Larrabee, FSA, EA, MAAA
Principal and Consulting Actuary

A handwritten signature in black ink, appearing to read "Scott Preppernau".

Scott Preppernau, FSA, EA, MAAA
Principal and Consulting Actuary



ACTUARIAL VALUATION REPORT DECEMBER 31, 2015

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

INDEPENDENT EMPLOYERS

Columbia River Public Utility District -- #2679

September 2016

CONTENTS

Executive Summary **1**

Employer Contribution Rates 1

Accounting Information 3

Principal Valuation Results 5

 ▪ Employer 5

 ▪ Tier 1/Tier 2 6

 ▪ OPSRP 7

 ▪ Retiree Healthcare 7

Side Account Information **8**

Tier 1/Tier 2 Valuation Results **10**

Assets 10

Liabilities 11

Unfunded Accrued Liability (UAL) 13

Contribution Rate Development 15

Data **20**

Brief Summary of Actuarial Methods and Assumptions **22**

Brief Summary of Changes in Plan Provisions **24**

Glossary **25**

Executive Summary

Milliman has prepared this report for Columbia River Public Utility District to:

- Provide summary December 31, 2015 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2017 through June 30, 2019,
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2015, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45. GASB 68 information will be provided separately by PERS and is not included in this report.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2015 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Columbia River Public Utility District.

Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2017 through June 30, 2019 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

Employer Rates Effective July 1, 2017 for Columbia River Public Utility District

	Payroll		
	Tier 1/Tier 2	OPSRP General Service	Police & Fire
Pension			
Normal cost rate	13.02%	8.02%	12.79%
Tier 1/Tier 2 UAL rate ¹	2.52%	2.52%	2.52%
OPSRP UAL rate	1.27%	1.27%	1.27%
Side account rate relief	0.00%	0.00%	0.00%
Net pension contribution rate	16.81%	11.81%	16.58%
Retiree Healthcare			
Normal cost rate	0.07%	0.00%	0.00%
UAL rate	0.43%	0.43%	0.43%
Net retiree healthcare rate	0.50%	0.43%	0.43%
Total net employer contribution rate	17.31%	12.24%	17.01%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate.

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 Biennium

The rate collar limits changes in contribution rates, but does not limit changes in rates for individual employers related to side accounts. The table below shows the possible minimum and maximum rates first effective as of July 1, 2019, which will depend on the funded status as of December 31, 2017. If the employer's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2015 is 72%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	15.54%	15.54%
Minimum 2019-2021 Rate	12.43%	9.32%
Maximum 2019-2021 Rate	18.65%	21.76%

Executive Summary

Accounting Information

Milliman is not an accounting or audit firm and cannot provide accounting advice. Milliman is not responsible for the interpretation of, or compliance with, accounting standards; citations to, and descriptions of accounting standards provided in this report are for reference purposes only. The information provided in this section is intended to assist the employer in completing its financial statements, but any accounting determination should be reviewed by your auditor.

Pension

In June 2012 the GASB issued Statement No. 68, which replaced GASB 27 and governs employer financial reporting for fiscal years beginning after June 15, 2014. The new standard replaced many of the key elements of the prior reporting requirements. Under the new rules, employers are required to record a balance sheet liability for their unfunded pension obligations. In addition, the timing and coordination of plan and employer reporting has changed under the new requirements. GASB 68 information for employers will be provided separately by PERS and is not included in this report.

Schedule of Funding Progress

Under GASB 27, the Schedule of Funding Progress for Tier 1/Tier 2 pension liabilities was reported in the Required Supplementary Information. This schedule is no longer required now that GASB 68 has replaced GASB 27. However, for additional information and the sake of historical comparison, the updated schedule is shown below for the last several valuations. For employers with side accounts, the actuarial value of assets in this Schedule includes the value of the employer's side accounts.

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (b - a)	Funded Ratio (a ÷ b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a) ÷ c)
12/31/2010	\$12,073,472	\$14,110,150	\$2,036,678	86%	\$3,977,426	51%
12/31/2011	11,614,143	13,958,378	2,344,235	83%	4,487,797	52%
12/31/2012	12,840,692	14,267,091	1,426,399	90%	4,454,644	32%
12/31/2013	14,273,050	15,360,117	1,087,067	93%	4,038,840	27%
12/31/2014	14,633,041	18,631,347	3,998,306	79%	4,065,031	98%
12/31/2015	14,549,491	20,145,336	5,595,845	72%	3,838,488	146%

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) is a cost-sharing pool under Statement No. 45 of the Governmental Accounting Standards Board (GASB 45). Consequently, each employer reports the contractually required contribution. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 was calculated as a part of this valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
	Tier 1 / Tier 2	OPSRP	
		General Service	Police & Fire
July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern employer financial reporting for retiree healthcare obligations for fiscal years beginning after June 15, 2017. In general, the changes required by GASB 75 parallel those that occurred for pension reporting when GASB 68 replaced GASB 27. Accounting information for reporting under GASB 75 will be provided separately and is not included in this report.

Executive Summary

Principal Valuation Results

A summary of principal valuation results from the current valuation and the prior valuation follows. Any changes in actuarial assumptions, methods or plan provisions between the two valuations are described later in this report. More detailed information can be found in the system-wide actuarial valuation report.

Columbia River Public Utility District

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
T1/T2 UAL	\$5,595,845	\$3,998,306
Allocated pooled OPSRP UAL	545,695	464,722
Side account	0	0
Net unfunded pension actuarial accrued liability	6,141,540	4,463,028
Combined valuation payroll	3,838,488	4,065,031
Net pension UAL as a percentage of payroll	160%	110%
Calculated side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	\$18,638	\$32,311

In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer’s combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.

Executive Summary

Principal Valuation Results (continued)

Tier 1/Tier 2

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
Normal cost	\$235,832	\$272,077
Tier 1/Tier 2 valuation payroll	1,811,277	2,089,163
Tier 1/Tier 2 pension normal cost rate	13.02%	13.02%
Tier 1/ Tier 2 Actuarial accrued liability	\$20,145,336	\$18,631,347
Actuarial asset value	14,549,491	14,633,041
Tier 1/Tier 2 Unfunded actuarial accrued liability	5,595,845	3,998,306
Tier 1/ Tier 2 Funded status	72%	79%
Combined valuation payroll	\$3,838,488	\$4,065,031
Tier 1/Tier 2 UAL as a percentage of payroll	146%	98%
Tier 1/Tier 2 UAL rate	2.52%	2.52%
(includes Multnomah Fire District #10)		
Tier 1/Tier 2 active members ¹	19	20
Tier 1/Tier 2 dormant members	16	17
Tier 1/Tier 2 retirees and beneficiaries	21	20

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
General service normal cost	\$342.2	\$301.3
OPSRP general service valuation payroll	4,266.9	3,720.4
General service normal cost rate	8.02%	8.10%
Police and fire normal cost	\$69.9	\$59.6
OPSRP police and fire valuation payroll	546.4	462.3
Police and fire normal cost rate	12.79%	12.90%
Actuarial accrued liability	\$3,742.5	\$3,064.1
Actuarial asset value	2,389.1	2,024.6
Unfunded actuarial accrued liability	1,353.5	1,039.5
Funded status	64%	66%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	14%	11%
UAL rate	1.27%	1.01%

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
RHIA		
Normal cost	\$3.3	\$3.5
Tier 1 / Tier 2 valuation payroll	4,730.8	4,933.1
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	\$465.6	\$468.4
Actuarial asset value	419.3	395.9
Unfunded actuarial accrued liability	46.3	72.5
Funded status	90%	85%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	0%	1%
UAL rate	0.43%	0.43%

Side Account Information

Reconciliation of Side Accounts

The following table reconciles the total side account from the beginning of the year to the end of the year. Side account transfers were calculated by PERS and made on a monthly basis. The amount of these transfers is shown in the table below.

All information in this table has been provided by PERS.

	New	Continuing	Total
1. Side account as of December 31, 2014	N/A		
2. Deposits made during 2015		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2015			
5. Side account earnings during 2015			
6. Side account as of December 31, 2015 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2015	December 31, 2014
Side account 1	\$0	\$0
Side account 2	0	0
Side account 3	0	0
Total	\$0	\$0

Development of Side Account Rate

The rate relief attributable to an employer's side account is determined by amortizing the side account balance on the valuation date over a fixed period, and expressing the result as a percentage of combined valuation payroll. For side accounts established prior to December 31, 2009, the fixed period ends December 31, 2027. For side accounts established at a later date, the fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2015	December 31, 2014
1. Total side account	\$0	\$0
2. Combined valuation payroll	3,838,488	4,065,031
3. Average Amortization factor	9.504	10.118
4. Total side account rate (-1. ÷ 2. ÷ 3.)¹	0.00%	0.00%

¹ For employers with more than one side account, the Total Side Account Rate is determined by calculating the rate on each side account separately and adding the rates together.

Tier 1/Tier 2 Valuation Results

Assets

A summary of the market value of pension assets, and reconciliation from the prior year are shown below.

Summary of Market Value of Tier 1/Tier 2 Pension Assets

	December 31, 2015	December 31, 2014
1. Member reserves	\$2,428,152	\$2,406,102
2. Employer reserves	7,714,610	7,589,432
3. Benefits in force reserve	4,406,729	4,637,507
4. Total market value of assets (1. + 2. + 3.)	\$14,549,491	\$14,633,041

The market value of member and employer reserves is provided by PERS. The benefits in force reserve provided by PERS is allocated each year among employers in proportion to their liabilities for retired members and beneficiaries.

Reconciliation of Tier 1/Tier 2 Pension Assets

	December 31, 2014 to December 31, 2015
1. Market value of assets at beginning of year	\$14,633,041
2. Regular employer contributions	313,623
3. Benefit payments and expense	(801,369)
4. Adjustments ¹	90,353
5. Interest credited	313,843
6. Total transferred from side accounts	0
7. Market value of assets at end of year (1. + 2. + 3. + 4. + 5. + 6.)	\$14,549,491

¹ Note the adjustment item above includes a reallocation of the benefits in force reserve, transfers to Multnomah Fire District #10, and other adjustments made by PERS.

Tier 1/Tier 2 Valuation Results

Liabilities

Normal Cost

The normal cost represents the value of benefits assigned to the next year of service by the actuarial cost method. If all actuarial assumptions are met, the normal cost represents the amount that would need to be contributed each year to fund plan benefits. Amounts shown below include assumed administrative expenses, which are allocated pro-rata based on normal cost.

Summary of Normal Cost by Tier/Member Classification

	December 31, 2015	December 31, 2014
Tier 1 Police & Fire	\$0	\$0
Tier 1 General Service	109,186	128,761
Tier 2 Police & Fire	0	0
Tier 2 General Service	126,646	143,316
Total	\$235,832	\$272,077

Change in Tier 1/Tier 2 Normal Cost

The following table shows the impact of the assumption, method, and plan changes on normal cost as of December 31, 2015.

	Before Changes	After Changes	Net Change
Normal Cost	\$235,832	\$235,832	\$0

Tier 1/Tier 2 Valuation Results

Liabilities

Actuarial Accrued Liability

The actuarial accrued liability represents the value of benefits allocated to service performed before the valuation date by the actuarial cost method. If all actuarial assumptions are met, the actuarial accrued liability represents the amount of assets that would need to be accumulated as of the valuation date to provide for the portion of benefits allocated to service already performed.

Summary of Actuarial Accrued Liability by Tier/Member Classification

	December 31, 2015	December 31, 2014
Active Members		
▪ Tier 1 Police & Fire	\$0	\$0
▪ Tier 1 General Service	3,375,150	3,711,386
▪ Tier 2 Police & Fire	0	0
▪ Tier 2 General Service	2,662,085	2,625,138
▪ Total Active Members	\$6,037,235	\$6,336,524
Dormant Members	4,593,129	3,298,174
Retired Members and Beneficiaries	9,514,972	8,996,649
Total Actuarial Accrued Liability	\$20,145,336	\$18,631,347

Change in Tier 1/Tier 2 Actuarial Accrued Liability

The following table shows the impact of the assumption, method, and plan changes on the actuarial accrued liability as of December 31, 2015.

	Before Changes	After Changes	Net Change
Actuarial Accrued Liability	\$20,145,336	\$20,145,336	\$0

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Summary of UAL

The UAL represents the difference between the assets accumulated and the liability attributed to prior years of service by the cost method.

	December 31, 2015	December 31, 2014
1. Actuarial accrued liability	\$20,145,336	\$18,631,347
2. Actuarial value of assets	14,549,491	14,633,041
3. Unfunded accrued liability (1. – 2.)	5,595,845	3,998,306
4. Funded percentage (2. ÷ 1.)	72%	79%
5. Combined valuation payroll	\$3,838,488	\$4,065,031
6. Unfunded accrued liability as % of combined valuation payroll (3. ÷ 5.)	146%	98%

Reconciliation of UAL Bases

Beginning with the December 31, 2013 actuarial valuation, each odd-year valuation establishes a 20-year closed-period amortization schedule for outstanding Tier 1/Tier 2 UAL amounts. Amortization schedules are calculated based on the total Tier 1/Tier 2 UAL as of that valuation date less the remaining unamortized balance of previously established Tier 1/Tier 2 UAL bases.

Amortization Base	UAL December 31, 2014	Payment	Interest	UAL December 31, 2015	Next Year's Payment
December 31, 2013	\$1,089,386	\$81,602	\$78,444	\$1,086,228	\$84,459
December 31, 2015	N/A	N/A	N/A	\$4,509,617	\$326,311
Total				\$5,595,845	\$410,770

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Actuarial Gain or Loss since Prior Valuation

The system-wide actuarial valuation report contains a detailed analysis of gains and losses since the last valuation. The table below shows the gain or loss for the individual employer.

1. Expected actuarial accrued liability	
a. Actuarial accrued liability at December 31, 2014	\$18,631,347
b. Normal cost at December 31, 2014 (excluding assumed expenses)	260,264
c. Benefit payments during 2015	(795,180)
d. Interest at 7.50% to December 31, 2015	1,377,292
e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)	19,473,723
f. Change in actuarial accrued liability due to assumption, method, and plan changes	0
g. Expected actuarial accrued liability at December 31, 2015 (e. + f.)	19,473,723
2. Actuarial accrued liability at December 31, 2015	20,145,336
3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)	(671,613)
4. Expected actuarial value of assets	
a. Actuarial value of assets at December 31, 2014	14,633,041
b. Contributions for 2015 ¹	313,623
c. Benefit payments and expenses during 2015	(801,369)
d. Interest at 7.50% to December 31, 2015	1,079,188
e. Expected actuarial value of assets at December 31, 2015 (a. + b. + c. + d.)	15,224,483
5. Actuarial value of assets at December 31, 2015	14,549,491
6. Gain/(loss) on actuarial value of assets (5. - 4.e.)	(674,992)
7. Total actuarial gain/(loss) (3. + 6.)	(\$1,346,605)

Unfunded Accrued Liability Reconciliation

A reconciliation of the Tier 1/Tier 2 UAL from December 31, 2014 is provided below.

1. UAL at December 31, 2014	\$3,998,306
2. Expected increase	250,934
3. Liability (gain)/loss	671,613
4. Asset (gain)/loss	674,992
5. Change due to changes in assumptions, methods, and plan provisions	0
6. UAL at December 31, 2015 (1. + 2. + 3. + 4. + 5.)	\$5,595,845

¹ Includes rate relief from side accounts.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Normal Cost Rate

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

Development of Tier 1/Tier 2 Normal Cost Rate

	December 31, 2015			December 31, 2014		
	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate
Tier 1 Police & Fire	\$0	\$0	0.00%	\$0	\$0	0.00%
Tier 1 General Service	109,186	684,659	15.95%	128,761	885,634	14.54%
Tier 2 Police & Fire	0	0	0.00%	0	0	0.00%
Tier 2 General Service	126,646	1,126,618	11.24%	143,316	1,203,529	11.91%
Total	\$235,832	\$1,811,277	13.02%	\$272,077	\$2,089,163	13.02%

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Development of Tier 1/Tier 2 UAL Rates

The UAL rate is determined by calculating the next year's scheduled payment to the UAL as a percentage of combined valuation payroll.

	December 31, 2015	December 31, 2014
1. Total Tier 1/Tier 2 UAL	\$5,595,845	\$3,998,306
2. Next year's Tier 1/Tier 2 UAL payment	410,770	292,088
3. Combined valuation payroll	3,838,488	4,065,031
4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)	10.70%	7.19%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	13.02%	13.02%
b. Tier 1/Tier 2 UAL rate	10.70%	7.19%
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate (a. + b. + c.)	23.87%	20.36%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Adjustments Due to Rate Collar and Minimum Rate Requirements

Employer contribution rates are generally limited to change by no more than the greater of 3 percent of payroll or 20 percent from the current contribution rate. However, if the funded percentage excluding side accounts is below 60 percent or above 140 percent the rate collar doubles in size. If the funded percentage excluding side accounts is between 60 and 70 percent or 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

The table below shows the current contribution rate for the period from July 1, 2015 through June 30, 2017, develops the maximum and minimum contribution rates effective July 1, 2017 based on the collar, and calculates the net adjustment due to the collar and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

1. Current net Tier 1/Tier 2 pension contribution rate		12.54%
2. Employer contribution rate attributable to side accounts		0.00%
3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)		12.54%
4. Size of rate collar		
a. 20% of current employer contribution rate (20% x 3.)		2.51%
b. Preliminary size of rate collar (maximum of 3% or a.)		3.00%
c. Funded percentage		72%
d. Size of rate collar (If c. < 60% or c. > 140%, 2 x b. If c. is 70%-130%, b. Otherwise, a graded rate between b. and 2 x b.)		3.00%
5. July 1, 2017 minimum employer contribution rate	(3. – 4.d. but not < 0%)	9.54%
6. July 1, 2017 maximum employer contribution rate	(3. + 4.d.)	15.54%
7. July 1, 2017 total pension rate, before adjustment		23.87%
8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)		(8.33%)
9. July 1, 2017 Tier 1/Tier 2 UAL rate, before collar		10.70%
10. July 1, 2017 Tier 1/Tier 2 UAL rate, after collar	(8. + 9.)	2.37%
11. July 1, 2017 Tier 1/Tier 2 pension rate, after collar		15.54%
12. Tier 1/Tier 2 retiree healthcare rate		0.50%
13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)		0.00%
14. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment		13.02%
15. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)		13.02%
16. July 1, 2017 Tier 1/Tier 2 pension rate, after minimum adjustment	(11. + 13.)	15.54%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Post-Rate Collar)

The table below summarizes the employer's pension contribution rate for Tier 1 /Tier 2 after adjustments for the rate collar and the 6 percent of payroll minimum employer contribution rate.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	13.02%	13.02%
b. Tier 1/Tier 2 UAL rate	2.37%	2.37%
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate <i>(a. + b. + c., minimum of 5.50%)</i>	15.54%	15.54%

Data

Demographic Information

Employer Valuation Payroll

	General Service	Police & Fire	Total
Tier 1	\$684,659	\$0	\$684,659
Tier 2	1,126,618	0	1,126,618
Tier 1/Tier 2 valuation payroll	1,811,277	0	1,811,277
OPSRP valuation payroll	2,027,211	0	2,027,211
Combined valuation payroll	\$3,838,488	\$0	\$3,838,488

Employer Member Census

	December 31							
	2015				2014			
	Tier 1	Tier 2	OPSRP	Total	Tier 1	Tier 2	OPSRP	Total
Active Members ¹								
General Service	7	12	23	42	8	12	23	43
Police & Fire	0	0	0	0	0	0	0	0
Total	7	12	23	42	8	12	23	43
Active Members with previous service segments with the employer								
General Service	0	3	N/A	3	0	2	N/A	2
Police & Fire	0	0	N/A	0	0	0	N/A	0
Total	0	3	N/A	3	0	2	N/A	2
Dormant Members								
General Service	8	8	3	19	8	9	1	18
Police & Fire	0	0	0	0	0	0	0	0
Total	8	8	3	19	8	9	1	18
Retired Members and Beneficiaries								
General Service	20	1	0	21	19	1	0	20
Police & Fire	0	0	0	0	0	0	0	0
Total	20	1	0	21	19	1	0	20
Grand Total Number of Members	35	24	26	85	35	24	24	83

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Data

Demographic Information (continued)

Employer Tier 1/Tier 2 Active Members as of December 31, 2015

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
<20										
20-24										
25-29										
30-34										
35-39										
40-44			3	1	1					5
45-49			1	1		1				3
50-54		1		3		1				5
55-59				1	1	1	1			4
60-64			1	1						2
65-69										
70-74										
75+										
Total	0	1	5	7	2	3	1	0	0	19

Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2015

Dormant Members			Retired Members and Beneficiaries		
Age	Count	Average Deferred Monthly Benefit	Age	Count	Average Monthly Benefit
<20			<45		
20-24			45-49		
25-29			50-54		
30-34			55-59	3	2,169
35-39			60-64	7	3,635
40-44	2	1,397	65-69	5	2,587
45-49	5	1,560	70-74	4	2,641
50-54	3	1,340	75-79	1	165
55-59	3	2,674	80-84	1	274
60-64	3	4,542	85-89		
65-69			90-94		
70-74			95-99		
75+			100+		
Total	16	2,266	Total	21	2,661

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2015 valuation can be found in the system-wide actuarial valuation report.

Actuarial Methods and Valuation Procedures

A brief summary of the methods used in this valuation is shown below:

<i>Actuarial cost method</i>	Entry Age Normal.
<i>Amortization Method</i>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. Gains and losses between subsequent odd-year valuations will be amortized as a level percentage of projected combined valuation payroll over a closed 20 year period.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.</p>

Economic Assumptions

A brief summary of the key economic assumptions used in this valuation is shown below:

<i>Net investment return</i>	7.50% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.50% compounded annually on members' regular account balances.</p> <p>7.50% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 6.3% in 2016 to 4.4% in 2094.
<i>Administrative Expenses</i>	<p>\$5.5 million added to OPSRP normal cost.</p> <p>\$33.0 million added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2014 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

There were no changes in actuarial methods and allocation procedures since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA actuarial methods and allocation procedures is provided as part of the system-wide valuation report.

Changes in Assumptions

There were no changes in assumptions since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA assumptions is provided as part of the system-wide valuation report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Glossary

Actuarial Accrued Liability

The portion of the present value of prospective benefits allocated to service and compensation before the valuation date in accordance with the actuarial cost method.

Actuarial Asset Value

The value of assets used in calculating the required contributions. The actuarial asset value may be equal to the fair market value of assets, or it may spread the recognition of certain investment gains or losses over a period of years in accordance with an asset valuation method.

Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disablement and retirement; rates of investment earnings and other relevant items.

Actuarial Cost Method

Sometimes called “funding method,” a particular technique used by actuaries to establish the amount and incidence of the annual actuarial cost of pension plan benefits, or normal cost, and the related unfunded actuarial accrued liability. Ordinarily, the annual contribution to the plan comprises the normal cost and an amount for amortization of the unfunded actuarial accrued liability.

Actuarial Gain or (Loss)

A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions, during the period between two actuarial valuation dates, as determined in accordance with a particular actuarial cost method.

Combined Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for both Tier 1/Tier 2 and OPSRP active members. This payroll is used to calculate UAL rates.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

Employer Contribution Rate

Consists of the normal cost rate and the UAL rates, plus adjustments for other items such as side account rate offsets.

Funded Status

The actuarial value of assets expressed as a percentage of the actuarial accrued liability.

Normal Cost

The annual cost allocated to the current year, under the actuarial cost method in use. The normal cost divided by the applicable payroll is the normal cost rate.

OPSRP Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for OPSRP active members. This payroll is used to calculate OPSRP normal cost rates.

Glossary

Pre-SLGRP Liability

The sum of Pre-SLGRP Pooled Liabilities and Transition Liabilities.

Pre-SLGRP Pooled Liability

The difference between the total UAL and the UAL attributable to the SLGRP for a pool of employers that joined the SLGRP. There are currently two pre-SLGRP pools. One was created for State Agencies and Community Colleges when the SLGRP was formed. The other one was created when the Local Government Rate Pool joined the SLGRP.

Present Value

Sometimes called “actuarial present value,” the estimated cost (as of the valuation date) of a series of future payments. The present value is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Rate Collar

A methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution rate and funded status.

Required Supplementary Information (RSI)

Schedules, statistical data, and other information that are an essential part of financial reporting and should be presented with, but are not part of, the basic financial statements of a governmental entity.

Statement No. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions.

Statement No. 68 of the Governmental Accounting Standards Board (GASB 68)

The accounting standard governing a state or local governmental employer’s accounting for pensions for fiscal years beginning after June 15, 2014.

Statement No. 75 of the Governmental Accounting Standards Board (GASB 75)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

The difference between the total UAL and the UAL attributable to the SLGRP for an individual employer that joined the SLGRP or the Local Government Rate Pool.

Unfunded Accrued Liability (UAL)

The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. The UAL is divided by combined valuation payroll and an amortization factor to determine an initial pre-collar UAL rate. The final UAL rate can be adjusted by the rate collar.



Milliman
111 SW Fifth Avenue, Suite 3700
Portland, OR 97204-3654
503 227 0634

This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

September 2016

City of Coos Bay/2152
Oregon Public Employees Retirement System

Dear Sir or Madam:

As part of our engagement with the Oregon Public Employees Retirement Board, we performed a system-wide actuarial valuation of the Oregon Public Employees Retirement System (“PERS” or “the System”) as of December 31, 2015. The attached report, which is an informational supplement to the system-wide report, provides you with employer-specific contribution rates that will become effective July 1, 2017. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information will be provided separately by PERS and is not included in this report.

This report reflects the System's benefit provisions in effect as of December 31, 2015. The full development of the valuation results for the OPSRP and Retiree Health Insurance Account (RHIA) programs can be found in the separate system-wide actuarial valuation report. Costs of the IAP (Individual Account Program) are not included in this or the system-wide actuarial valuation report. Further, costs of pension obligation bond payments are not included in this or the system-wide actuarial valuation report.

If you have any questions about this report, please contact Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, OPSRP general service, and OPSRP police and fire payroll,
- Information to assist you in completing GASB 45 financial reporting requirements, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- Detailed development of Tier 1/Tier 2 valuation results,
- A brief summary of methods and assumptions, and
- A brief summary of any changes in System benefit provisions.

Additional information is provided in the system-wide actuarial valuation report, which is available at www.oregon.gov/PERS/Pages/section/financial_reports/financials.aspx.



September 2016
City of Coos Bay/2152

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the System's staff. This information includes, but is not limited to, System benefit provisions as defined by statute, member census data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for the System have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer a reasonable estimate of anticipated experience affecting the System.

A valuation report is only an estimate of the System's financial condition as of a single date. It can neither predict the System's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of System benefits, only the timing of System contributions. While a valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: System experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the System's funded status); and changes in System benefit provisions or applicable law. Due to the limited scope of this assignment, we did not perform an analysis of the potential range of future measurements. The Board has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in September 2015.

Some of the actuarial computations presented in this report are for purposes of determining the contribution rates effective from July 2017 to June 2019 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.



September 2016
City of Coos Bay/2152

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the System. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

Additional information is provided in the system-wide actuarial valuation report.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Larrabee".

Matt Larrabee, FSA, EA, MAAA
Principal and Consulting Actuary

A handwritten signature in black ink, appearing to read "Scott Preppernau".

Scott Preppernau, FSA, EA, MAAA
Principal and Consulting Actuary



ACTUARIAL VALUATION REPORT DECEMBER 31, 2015

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

INDEPENDENT EMPLOYERS

City of Coos Bay -- #2152

September 2016

Secondary Employers

2190 City Of Eastside

CONTENTS

Executive Summary **1**

Employer Contribution Rates 1

Accounting Information 3

Principal Valuation Results 5

 ▪ Employer 5

 ▪ Tier 1/Tier 2 6

 ▪ OPSRP 7

 ▪ Retiree Healthcare 7

Side Account Information **8**

Tier 1/Tier 2 Valuation Results **10**

Assets 10

Liabilities 11

Unfunded Accrued Liability (UAL) 13

Contribution Rate Development 15

Data **20**

Brief Summary of Actuarial Methods and Assumptions **22**

Brief Summary of Changes in Plan Provisions **24**

Glossary **25**

Executive Summary

Milliman has prepared this report for City of Coos Bay to:

- Provide summary December 31, 2015 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2017 through June 30, 2019,
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2015, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45. GASB 68 information will be provided separately by PERS and is not included in this report.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2015 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to City of Coos Bay.

Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2017 through June 30, 2019 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

Employer Rates Effective July 1, 2017 for City of Coos Bay

	Payroll		
	Tier 1/Tier 2	OPSRP General Service	OPSRP Police & Fire
Pension			
Normal cost rate	19.14%	8.02%	12.79%
Tier 1/Tier 2 UAL rate ¹	0.02%	0.02%	0.02%
OPSRP UAL rate	1.27%	1.27%	1.27%
Side account rate relief	0.00%	0.00%	0.00%
Net pension contribution rate	20.43%	9.31%	14.08%
Retiree Healthcare			
Normal cost rate	0.07%	0.00%	0.00%
UAL rate	0.43%	0.43%	0.43%
Net retiree healthcare rate	0.50%	0.43%	0.43%
Total net employer contribution rate	20.93%	9.74%	14.51%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate.

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 Biennium

The rate collar limits changes in contribution rates, but does not limit changes in rates for individual employers related to side accounts. The table below shows the possible minimum and maximum rates first effective as of July 1, 2019, which will depend on the funded status as of December 31, 2017. If the employer's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2015 is 76%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	19.16%	19.16%
Minimum 2019-2021 Rate	15.33%	11.50%
Maximum 2019-2021 Rate	22.99%	26.82%

Executive Summary

Accounting Information

Milliman is not an accounting or audit firm and cannot provide accounting advice. Milliman is not responsible for the interpretation of, or compliance with, accounting standards; citations to, and descriptions of accounting standards provided in this report are for reference purposes only. The information provided in this section is intended to assist the employer in completing its financial statements, but any accounting determination should be reviewed by your auditor.

Pension

In June 2012 the GASB issued Statement No. 68, which replaced GASB 27 and governs employer financial reporting for fiscal years beginning after June 15, 2014. The new standard replaced many of the key elements of the prior reporting requirements. Under the new rules, employers are required to record a balance sheet liability for their unfunded pension obligations. In addition, the timing and coordination of plan and employer reporting has changed under the new requirements. GASB 68 information for employers will be provided separately by PERS and is not included in this report.

Schedule of Funding Progress

Under GASB 27, the Schedule of Funding Progress for Tier 1/Tier 2 pension liabilities was reported in the Required Supplementary Information. This schedule is no longer required now that GASB 68 has replaced GASB 27. However, for additional information and the sake of historical comparison, the updated schedule is shown below for the last several valuations. For employers with side accounts, the actuarial value of assets in this Schedule includes the value of the employer's side accounts.

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (b - a)	Funded Ratio (a ÷ b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a) ÷ c)
12/31/2010	\$35,757,840	\$40,041,572	\$4,283,732	89%	\$5,849,235	73%
12/31/2011	35,279,915	42,431,747	7,151,832	83%	6,136,958	117%
12/31/2012	39,127,841	43,090,689	3,962,848	91%	6,598,945	60%
12/31/2013	41,335,740	45,297,166	3,961,426	91%	6,468,089	61%
12/31/2014	42,228,086	53,256,432	11,028,346	79%	6,686,955	165%
12/31/2015	41,835,830	55,360,000	13,524,170	76%	7,153,305	189%

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) is a cost-sharing pool under Statement No. 45 of the Governmental Accounting Standards Board (GASB 45). Consequently, each employer reports the contractually required contribution. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 was calculated as a part of this valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
	Tier 1 / Tier 2	OPSRP	
		General Service	Police & Fire
July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern employer financial reporting for retiree healthcare obligations for fiscal years beginning after June 15, 2017. In general, the changes required by GASB 75 parallel those that occurred for pension reporting when GASB 68 replaced GASB 27. Accounting information for reporting under GASB 75 will be provided separately and is not included in this report.

Executive Summary

Principal Valuation Results

A summary of principal valuation results from the current valuation and the prior valuation follows. Any changes in actuarial assumptions, methods or plan provisions between the two valuations are described later in this report. More detailed information can be found in the system-wide actuarial valuation report.

City of Coos Bay

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
T1/T2 UAL	\$13,524,170	\$11,028,346
Allocated pooled OPSRP UAL	1,016,942	764,465
Side account	0	0
Net unfunded pension actuarial accrued liability	14,541,112	11,792,811
Combined valuation payroll	7,153,305	6,686,955
Net pension UAL as a percentage of payroll	203%	176%
Calculated side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	\$34,734	\$53,152

In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer’s combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.

Executive Summary

Principal Valuation Results (continued)

Tier 1/Tier 2

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
Normal cost	\$778,230	\$757,621
Tier 1/Tier 2 valuation payroll	4,065,836	3,981,491
Tier 1/Tier 2 pension normal cost rate	19.14%	19.03%
Tier 1/ Tier 2 Actuarial accrued liability	\$55,360,000	\$53,256,432
Actuarial asset value	41,835,830	42,228,086
Tier 1/Tier 2 Unfunded actuarial accrued liability	13,524,170	11,028,346
Tier 1/ Tier 2 Funded status	76%	79%
Combined valuation payroll	\$7,153,305	\$6,686,955
Tier 1/Tier 2 UAL as a percentage of payroll	189%	165%
Tier 1/Tier 2 UAL rate (includes Multnomah Fire District #10)	0.02%	0.13%
Tier 1/Tier 2 active members ¹	49	49
Tier 1/Tier 2 dormant members	13	16
Tier 1/Tier 2 retirees and beneficiaries	132	127

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
General service normal cost	\$342.2	\$301.3
OPSRP general service valuation payroll	4,266.9	3,720.4
General service normal cost rate	8.02%	8.10%
Police and fire normal cost	\$69.9	\$59.6
OPSRP police and fire valuation payroll	546.4	462.3
Police and fire normal cost rate	12.79%	12.90%
Actuarial accrued liability	\$3,742.5	\$3,064.1
Actuarial asset value	2,389.1	2,024.6
Unfunded actuarial accrued liability	1,353.5	1,039.5
Funded status	64%	66%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	14%	11%
UAL rate	1.27%	1.01%

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
RHIA		
Normal cost	\$3.3	\$3.5
Tier 1 / Tier 2 valuation payroll	4,730.8	4,933.1
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	\$465.6	\$468.4
Actuarial asset value	419.3	395.9
Unfunded actuarial accrued liability	46.3	72.5
Funded status	90%	85%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	0%	1%
UAL rate	0.43%	0.43%

Side Account Information

Reconciliation of Side Accounts

The following table reconciles the total side account from the beginning of the year to the end of the year. Side account transfers were calculated by PERS and made on a monthly basis. The amount of these transfers is shown in the table below.

All information in this table has been provided by PERS.

	New	Continuing	Total
1. Side account as of December 31, 2014	N/A		
2. Deposits made during 2015		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2015			
5. Side account earnings during 2015			
6. Side account as of December 31, 2015 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2015	December 31, 2014
Side account 1	\$0	\$0
Side account 2	0	0
Side account 3	0	0
Total	\$0	\$0

Development of Side Account Rate

The rate relief attributable to an employer's side account is determined by amortizing the side account balance on the valuation date over a fixed period, and expressing the result as a percentage of combined valuation payroll. For side accounts established prior to December 31, 2009, the fixed period ends December 31, 2027. For side accounts established at a later date, the fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2015	December 31, 2014
1. Total side account	\$0	\$0
2. Combined valuation payroll	7,153,305	6,686,955
3. Average Amortization factor	9.504	10.118
4. Total side account rate (-1. ÷ 2. ÷ 3.)¹	0.00%	0.00%

¹ For employers with more than one side account, the Total Side Account Rate is determined by calculating the rate on each side account separately and adding the rates together.

Tier 1/Tier 2 Valuation Results

Assets

A summary of the market value of pension assets, and reconciliation from the prior year are shown below.

Summary of Market Value of Tier 1/Tier 2 Pension Assets

	December 31, 2015	December 31, 2014
1. Member reserves	\$5,271,404	\$5,146,580
2. Employer reserves	21,646,905	20,966,311
3. Benefits in force reserve	14,917,520	16,115,194
4. Total market value of assets (1. + 2. + 3.)	\$41,835,830	\$42,228,086

The market value of member and employer reserves is provided by PERS. The benefits in force reserve provided by PERS is allocated each year among employers in proportion to their liabilities for retired members and beneficiaries.

Reconciliation of Tier 1/Tier 2 Pension Assets

	December 31, 2014 to December 31, 2015
1. Market value of assets at beginning of year	\$42,228,086
2. Regular employer contributions	565,180
3. Benefit payments and expense	(2,712,770)
4. Adjustments ¹	769,855
5. Interest credited	985,479
6. Total transferred from side accounts	0
7. Market value of assets at end of year (1. + 2. + 3. + 4. + 5. + 6.)	\$41,835,830

¹ Note the adjustment item above includes a reallocation of the benefits in force reserve, transfers to Multnomah Fire District #10, and other adjustments made by PERS.

Tier 1/Tier 2 Valuation Results

Liabilities

Normal Cost

The normal cost represents the value of benefits assigned to the next year of service by the actuarial cost method. If all actuarial assumptions are met, the normal cost represents the amount that would need to be contributed each year to fund plan benefits. Amounts shown below include assumed administrative expenses, which are allocated pro-rata based on normal cost.

Summary of Normal Cost by Tier/Member Classification

	December 31, 2015	December 31, 2014
Tier 1 Police & Fire	\$255,980	\$250,978
Tier 1 General Service	149,255	146,183
Tier 2 Police & Fire	306,069	296,013
Tier 2 General Service	66,926	64,447
Total	\$778,230	\$757,621

Change in Tier 1/Tier 2 Normal Cost

The following table shows the impact of the assumption, method, and plan changes on normal cost as of December 31, 2015.

	Before Changes	After Changes	Net Change
Normal Cost	\$778,230	\$778,230	\$0

Tier 1/Tier 2 Valuation Results

Liabilities

Actuarial Accrued Liability

The actuarial accrued liability represents the value of benefits allocated to service performed before the valuation date by the actuarial cost method. If all actuarial assumptions are met, the actuarial accrued liability represents the amount of assets that would need to be accumulated as of the valuation date to provide for the portion of benefits allocated to service already performed.

Summary of Actuarial Accrued Liability by Tier/Member Classification

	December 31, 2015	December 31, 2014
Active Members		
▪ Tier 1 Police & Fire	\$8,598,325	\$8,172,159
▪ Tier 1 General Service	5,476,634	5,217,002
▪ Tier 2 Police & Fire	5,735,174	5,125,600
▪ Tier 2 General Service	1,031,829	911,005
▪ Total Active Members	\$20,841,962	\$19,425,766
Dormant Members	2,308,256	2,567,588
Retired Members and Beneficiaries	32,209,782	31,263,078
Total Actuarial Accrued Liability	\$55,360,000	\$53,256,432

Change in Tier 1/Tier 2 Actuarial Accrued Liability

The following table shows the impact of the assumption, method, and plan changes on the actuarial accrued liability as of December 31, 2015.

	Before Changes	After Changes	Net Change
Actuarial Accrued Liability	\$55,360,000	\$55,360,000	\$0

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Summary of UAL

The UAL represents the difference between the assets accumulated and the liability attributed to prior years of service by the cost method.

	December 31, 2015	December 31, 2014
1. Actuarial accrued liability	\$55,360,000	\$53,256,432
2. Actuarial value of assets	41,835,830	42,228,086
3. Unfunded accrued liability (1. – 2.)	13,524,170	11,028,346
4. Funded percentage (2. ÷ 1.)	76%	79%
5. Combined valuation payroll	\$7,153,305	\$6,686,955
6. Unfunded accrued liability as % of combined valuation payroll (3. ÷ 5.)	189%	165%

Reconciliation of UAL Bases

Beginning with the December 31, 2013 actuarial valuation, each odd-year valuation establishes a 20-year closed-period amortization schedule for outstanding Tier 1/Tier 2 UAL amounts. Amortization schedules are calculated based on the total Tier 1/Tier 2 UAL as of that valuation date less the remaining unamortized balance of previously established Tier 1/Tier 2 UAL bases.

Amortization Base	UAL December 31, 2014	Payment	Interest	UAL December 31, 2015	Next Year's Payment
December 31, 2013	\$3,969,879	\$297,369	\$285,861	\$3,958,371	\$307,781
December 31, 2015	N/A	N/A	N/A	\$9,565,799	\$692,171
Total				\$13,524,170	\$999,952

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Actuarial Gain or Loss since Prior Valuation

The system-wide actuarial valuation report contains a detailed analysis of gains and losses since the last valuation. The table below shows the gain or loss for the individual employer.

1. Expected actuarial accrued liability	
a. Actuarial accrued liability at December 31, 2014	\$53,256,432
b. Normal cost at December 31, 2014 (excluding assumed expenses)	724,602
c. Benefit payments during 2015	(2,691,817)
d. Interest at 7.50% to December 31, 2015	3,920,462
e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)	55,209,679
f. Change in actuarial accrued liability due to assumption, method, and plan changes	0
g. Expected actuarial accrued liability at December 31, 2015 (e. + f.)	55,209,679
2. Actuarial accrued liability at December 31, 2015	55,360,000
3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)	(150,321)
4. Expected actuarial value of assets	
a. Actuarial value of assets at December 31, 2014	42,228,086
b. Contributions for 2015 ¹	565,180
c. Benefit payments and expenses during 2015	(2,712,770)
d. Interest at 7.50% to December 31, 2015	3,086,572
e. Expected actuarial value of assets at December 31, 2015 (a. + b. + c. + d.)	43,167,068
5. Actuarial value of assets at December 31, 2015	41,835,830
6. Gain/(loss) on actuarial value of assets (5. - 4.e.)	(1,331,238)
7. Total actuarial gain/(loss) (3. + 6.)	(\$1,481,559)

Unfunded Accrued Liability Reconciliation

A reconciliation of the Tier 1/Tier 2 UAL from December 31, 2014 is provided below.

1. UAL at December 31, 2014	\$11,028,346
2. Expected increase	1,014,265
3. Liability (gain)/loss	150,321
4. Asset (gain)/loss	1,331,238
5. Change due to changes in assumptions, methods, and plan provisions	0
6. UAL at December 31, 2015 (1. + 2. + 3. + 4. + 5.)	\$13,524,170

¹ Includes rate relief from side accounts.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Normal Cost Rate

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

Development of Tier 1/Tier 2 Normal Cost Rate

	December 31, 2015			December 31, 2014		
	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate
Tier 1 Police & Fire	\$255,980	\$1,168,286	21.91%	\$250,978	\$1,162,345	21.59%
Tier 1 General Service	149,255	794,003	18.80%	146,183	779,847	18.75%
Tier 2 Police & Fire	306,069	1,609,063	19.02%	296,013	1,560,813	18.97%
Tier 2 General Service	66,926	494,484	13.53%	64,447	478,486	13.47%
Total	\$778,230	\$4,065,836	19.14%	\$757,621	\$3,981,491	19.03%

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Development of Tier 1/Tier 2 UAL Rates

The UAL rate is determined by calculating the next year's scheduled payment to the UAL as a percentage of combined valuation payroll.

	December 31, 2015	December 31, 2014
1. Total Tier 1/Tier 2 UAL	\$13,524,170	\$11,028,346
2. Next year's Tier 1/Tier 2 UAL payment	999,952	808,112
3. Combined valuation payroll	7,153,305	6,686,955
4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)	13.98%	12.08%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	19.14%	19.03%
b. Tier 1/Tier 2 UAL rate	13.98%	12.08%
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate (a. + b. + c.)	33.27%	31.26%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Adjustments Due to Rate Collar and Minimum Rate Requirements

Employer contribution rates are generally limited to change by no more than the greater of 3 percent of payroll or 20 percent from the current contribution rate. However, if the funded percentage excluding side accounts is below 60 percent or above 140 percent the rate collar doubles in size. If the funded percentage excluding side accounts is between 60 and 70 percent or 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

The table below shows the current contribution rate for the period from July 1, 2015 through June 30, 2017, develops the maximum and minimum contribution rates effective July 1, 2017 based on the collar, and calculates the net adjustment due to the collar and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

1. Current net Tier 1/Tier 2 pension contribution rate		15.97%
2. Employer contribution rate attributable to side accounts		0.00%
3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)		15.97%
4. Size of rate collar		
a. 20% of current employer contribution rate (20% x 3.)		3.19%
b. Preliminary size of rate collar (maximum of 3% or a.)		3.19%
c. Funded percentage		76%
d. Size of rate collar (If c. < 60% or c. > 140%, 2 x b. If c. is 70%-130%, b. Otherwise, a graded rate between b. and 2 x b.)		3.19%
5. July 1, 2017 minimum employer contribution rate	(3. – 4.d. but not < 0%)	12.78%
6. July 1, 2017 maximum employer contribution rate	(3. + 4.d.)	19.16%
7. July 1, 2017 total pension rate, before adjustment		33.27%
8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)		(14.11%)
9. July 1, 2017 Tier 1/Tier 2 UAL rate, before collar		13.98%
10. July 1, 2017 Tier 1/Tier 2 UAL rate, after collar	(8. + 9.)	(0.13%)
11. July 1, 2017 Tier 1/Tier 2 pension rate, after collar		19.16%
12. Tier 1/Tier 2 retiree healthcare rate		0.50%
13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)		0.00%
14. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment		19.14%
15. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)		19.14%
16. July 1, 2017 Tier 1/Tier 2 pension rate, after minimum adjustment	(11. + 13.)	19.16%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Post-Rate Collar)

The table below summarizes the employer's pension contribution rate for Tier 1 /Tier 2 after adjustments for the rate collar and the 6 percent of payroll minimum employer contribution rate.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	19.14%	19.03%
b. Tier 1/Tier 2 UAL rate	(0.13%)	(0.02%)
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate <i>(a. + b. + c., minimum of 5.50%)</i>	19.16%	19.16%

Data

Demographic Information

Employer Valuation Payroll

	General Service	Police & Fire	Total
Tier 1	\$794,003	\$1,168,286	\$1,962,289
Tier 2	494,484	1,609,063	2,103,547
Tier 1/Tier 2 valuation payroll	1,288,487	2,777,349	4,065,836
OPSRP valuation payroll	1,934,411	1,153,058	3,087,469
Combined valuation payroll	\$3,222,898	\$3,930,407	\$7,153,305

Employer Member Census

	December 31							
	2015				2014			
	Tier 1	Tier 2	OPSRP	Total	Tier 1	Tier 2	OPSRP	Total
Active Members ¹								
General Service	13	8	33	54	13	8	29	50
Police & Fire	11	17	13	41	11	17	12	40
Total	24	25	46	95	24	25	41	90
Active Members with previous service segments with the employer								
General Service	16	3	N/A	19	18	2	N/A	20
Police & Fire	11	2	N/A	13	11	2	N/A	13
Total	27	5	N/A	32	29	4	N/A	33
Dormant Members								
General Service	4	4	7	15	4	5	6	15
Police & Fire	5	0	1	6	7	0	1	8
Total	9	4	8	21	11	5	7	23
Retired Members and Beneficiaries								
General Service	72	8	0	80	70	7	0	77
Police & Fire	50	2	0	52	49	1	0	50
Total	122	10	0	132	119	8	0	127
Grand Total Number of Members	182	44	54	280	183	42	48	273

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Data

Demographic Information (continued)

Employer Tier 1/Tier 2 Active Members as of December 31, 2015

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
<20										
20-24										
25-29										
30-34										
35-39			2							2
40-44			3	4						7
45-49			4	7	5	1				17
50-54			1	1	1	4				7
55-59			2	1	1	4	2			10
60-64		1	2		1					4
65-69				1		1				2
70-74										
75+										
Total	0	1	14	14	8	10	2	0	0	49

Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2015

Dormant Members			Retired Members and Beneficiaries		
Age	Count	Average Deferred Monthly Benefit	Age	Count	Average Monthly Benefit
<20			<45	2	479
20-24			45-49	1	143
25-29			50-54	4	1,725
30-34			55-59	9	1,275
35-39			60-64	26	1,647
40-44			65-69	32	1,852
45-49	2	2,326	70-74	29	1,733
50-54	4	1,235	75-79	17	1,207
55-59	1	2,674	80-84	7	1,243
60-64	3	637	85-89	4	1,172
65-69	2	1,556	90-94		
70-74	1	55	95-99	1	162
75+			100+		
Total	13	1,334	Total	132	1,560

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2015 valuation can be found in the system-wide actuarial valuation report.

Actuarial Methods and Valuation Procedures

A brief summary of the methods used in this valuation is shown below:

<i>Actuarial cost method</i>	Entry Age Normal.
<i>Amortization Method</i>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. Gains and losses between subsequent odd-year valuations will be amortized as a level percentage of projected combined valuation payroll over a closed 20 year period.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.</p>

Economic Assumptions

A brief summary of the key economic assumptions used in this valuation is shown below:

<i>Net investment return</i>	7.50% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.50% compounded annually on members' regular account balances.</p> <p>7.50% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 6.3% in 2016 to 4.4% in 2094.
<i>Administrative Expenses</i>	<p>\$5.5 million added to OPSRP normal cost.</p> <p>\$33.0 million added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2014 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

There were no changes in actuarial methods and allocation procedures since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA actuarial methods and allocation procedures is provided as part of the system-wide valuation report.

Changes in Assumptions

There were no changes in assumptions since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA assumptions is provided as part of the system-wide valuation report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Glossary

Actuarial Accrued Liability

The portion of the present value of prospective benefits allocated to service and compensation before the valuation date in accordance with the actuarial cost method.

Actuarial Asset Value

The value of assets used in calculating the required contributions. The actuarial asset value may be equal to the fair market value of assets, or it may spread the recognition of certain investment gains or losses over a period of years in accordance with an asset valuation method.

Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disablement and retirement; rates of investment earnings and other relevant items.

Actuarial Cost Method

Sometimes called "funding method," a particular technique used by actuaries to establish the amount and incidence of the annual actuarial cost of pension plan benefits, or normal cost, and the related unfunded actuarial accrued liability. Ordinarily, the annual contribution to the plan comprises the normal cost and an amount for amortization of the unfunded actuarial accrued liability.

Actuarial Gain or (Loss)

A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions, during the period between two actuarial valuation dates, as determined in accordance with a particular actuarial cost method.

Combined Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for both Tier 1/Tier 2 and OPSRP active members. This payroll is used to calculate UAL rates.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

Employer Contribution Rate

Consists of the normal cost rate and the UAL rates, plus adjustments for other items such as side account rate offsets.

Funded Status

The actuarial value of assets expressed as a percentage of the actuarial accrued liability.

Normal Cost

The annual cost allocated to the current year, under the actuarial cost method in use. The normal cost divided by the applicable payroll is the normal cost rate.

OPSRP Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for OPSRP active members. This payroll is used to calculate OPSRP normal cost rates.

Glossary

Pre-SLGRP Liability

The sum of Pre-SLGRP Pooled Liabilities and Transition Liabilities.

Pre-SLGRP Pooled Liability

The difference between the total UAL and the UAL attributable to the SLGRP for a pool of employers that joined the SLGRP. There are currently two pre-SLGRP pools. One was created for State Agencies and Community Colleges when the SLGRP was formed. The other one was created when the Local Government Rate Pool joined the SLGRP.

Present Value

Sometimes called “actuarial present value,” the estimated cost (as of the valuation date) of a series of future payments. The present value is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Rate Collar

A methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution rate and funded status.

Required Supplementary Information (RSI)

Schedules, statistical data, and other information that are an essential part of financial reporting and should be presented with, but are not part of, the basic financial statements of a governmental entity.

Statement No. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions.

Statement No. 68 of the Governmental Accounting Standards Board (GASB 68)

The accounting standard governing a state or local governmental employer’s accounting for pensions for fiscal years beginning after June 15, 2014.

Statement No. 75 of the Governmental Accounting Standards Board (GASB 75)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

The difference between the total UAL and the UAL attributable to the SLGRP for an individual employer that joined the SLGRP or the Local Government Rate Pool.

Unfunded Accrued Liability (UAL)

The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. The UAL is divided by combined valuation payroll and an amortization factor to determine an initial pre-collar UAL rate. The final UAL rate can be adjusted by the rate collar.



Milliman
111 SW Fifth Avenue, Suite 3700
Portland, OR 97204-3654
503 227 0634

This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

September 2016

City of Cornelius/2165
Oregon Public Employees Retirement System

Dear Sir or Madam:

As part of our engagement with the Oregon Public Employees Retirement Board, we performed a system-wide actuarial valuation of the Oregon Public Employees Retirement System (“PERS” or “the System”) as of December 31, 2015. The attached report, which is an informational supplement to the system-wide report, provides you with employer-specific contribution rates that will become effective July 1, 2017. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information will be provided separately by PERS and is not included in this report.

This report reflects the System's benefit provisions in effect as of December 31, 2015. The full development of the valuation results for the OPSRP and Retiree Health Insurance Account (RHIA) programs can be found in the separate system-wide actuarial valuation report. Costs of the IAP (Individual Account Program) are not included in this or the system-wide actuarial valuation report. Further, costs of pension obligation bond payments are not included in this or the system-wide actuarial valuation report.

If you have any questions about this report, please contact Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, OPSRP general service, and OPSRP police and fire payroll,
- Information to assist you in completing GASB 45 financial reporting requirements, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- Detailed development of Tier 1/Tier 2 valuation results,
- A brief summary of methods and assumptions, and
- A brief summary of any changes in System benefit provisions.

Additional information is provided in the system-wide actuarial valuation report, which is available at www.oregon.gov/PERS/Pages/section/financial_reports/financials.aspx.

September 2016
City of Cornelius/2165

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the System's staff. This information includes, but is not limited to, System benefit provisions as defined by statute, member census data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for the System have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer a reasonable estimate of anticipated experience affecting the System.

A valuation report is only an estimate of the System's financial condition as of a single date. It can neither predict the System's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of System benefits, only the timing of System contributions. While a valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: System experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the System's funded status); and changes in System benefit provisions or applicable law. Due to the limited scope of this assignment, we did not perform an analysis of the potential range of future measurements. The Board has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in September 2015.

Some of the actuarial computations presented in this report are for purposes of determining the contribution rates effective from July 2017 to June 2019 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.



September 2016
City of Cornelius/2165

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the System. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

Additional information is provided in the system-wide actuarial valuation report.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Larrabee".

Matt Larrabee, FSA, EA, MAAA
Principal and Consulting Actuary

A handwritten signature in black ink, appearing to read "Scott Preppernau".

Scott Preppernau, FSA, EA, MAAA
Principal and Consulting Actuary



ACTUARIAL VALUATION REPORT DECEMBER 31, 2015

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

INDEPENDENT EMPLOYERS

City of Cornelius -- #2165

September 2016

CONTENTS

- Executive Summary** **1**
- Employer Contribution Rates* 1
- Accounting Information* 3
- Principal Valuation Results* 5
- Employer 5
- Tier 1/Tier 2 6
- OPSRP 7
- Retiree Healthcare 7
- Side Account Information** **8**
- Tier 1/Tier 2 Valuation Results** **10**
- Assets* 10
- Liabilities* 11
- Unfunded Accrued Liability (UAL)* 13
- Contribution Rate Development* 15
- Data** **20**
- Brief Summary of Actuarial Methods and Assumptions** **22**
- Brief Summary of Changes in Plan Provisions** **24**
- Glossary** **25**

Executive Summary

Milliman has prepared this report for City of Cornelius to:

- Provide summary December 31, 2015 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2017 through June 30, 2019,
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2015, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45. GASB 68 information will be provided separately by PERS and is not included in this report.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2015 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to City of Cornelius.

Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2017 through June 30, 2019 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

Employer Rates Effective July 1, 2017 for City of Cornelius

	Payroll		
	Tier 1/Tier 2	OPSRP	
		General Service	Police & Fire
Pension			
Normal cost rate	14.00%	8.02%	12.79%
Tier 1/Tier 2 UAL rate ¹	0.65%	0.65%	0.65%
OPSRP UAL rate	1.27%	1.27%	1.27%
Side account rate relief	0.00%	0.00%	0.00%
Net pension contribution rate	15.92%	9.94%	14.71%
Retiree Healthcare			
Normal cost rate	0.07%	0.00%	0.00%
UAL rate	0.43%	0.43%	0.43%
Net retiree healthcare rate	0.50%	0.43%	0.43%
Total net employer contribution rate	16.42%	10.37%	15.14%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate.

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 Biennium

The rate collar limits changes in contribution rates, but does not limit changes in rates for individual employers related to side accounts. The table below shows the possible minimum and maximum rates first effective as of July 1, 2019, which will depend on the funded status as of December 31, 2017. If the employer's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2015 is 85%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	14.65%	14.65%
Minimum 2019-2021 Rate	11.65%	8.65%
Maximum 2019-2021 Rate	17.65%	20.65%

Executive Summary

Accounting Information

Milliman is not an accounting or audit firm and cannot provide accounting advice. Milliman is not responsible for the interpretation of, or compliance with, accounting standards; citations to, and descriptions of accounting standards provided in this report are for reference purposes only. The information provided in this section is intended to assist the employer in completing its financial statements, but any accounting determination should be reviewed by your auditor.

Pension

In June 2012 the GASB issued Statement No. 68, which replaced GASB 27 and governs employer financial reporting for fiscal years beginning after June 15, 2014. The new standard replaced many of the key elements of the prior reporting requirements. Under the new rules, employers are required to record a balance sheet liability for their unfunded pension obligations. In addition, the timing and coordination of plan and employer reporting has changed under the new requirements. GASB 68 information for employers will be provided separately by PERS and is not included in this report.

Schedule of Funding Progress

Under GASB 27, the Schedule of Funding Progress for Tier 1/Tier 2 pension liabilities was reported in the Required Supplementary Information. This schedule is no longer required now that GASB 68 has replaced GASB 27. However, for additional information and the sake of historical comparison, the updated schedule is shown below for the last several valuations. For employers with side accounts, the actuarial value of assets in this Schedule includes the value of the employer's side accounts.

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (b - a)	Funded Ratio (a ÷ b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a) ÷ c)
12/31/2010	\$12,910,986	\$13,544,596	\$633,610	95%	\$3,185,343	20%
12/31/2011	12,741,384	14,273,829	1,532,445	89%	3,159,772	49%
12/31/2012	14,125,865	14,240,263	114,398	99%	3,158,935	4%
12/31/2013	15,582,414	15,109,557	(472,857)	103%	3,177,105	(15%)
12/31/2014	16,019,875	18,417,725	2,397,850	87%	2,121,002	113%
12/31/2015	15,857,678	18,608,088	2,750,410	85%	2,206,856	125%

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) is a cost-sharing pool under Statement No. 45 of the Governmental Accounting Standards Board (GASB 45). Consequently, each employer reports the contractually required contribution. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 was calculated as a part of this valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
	Tier 1 / Tier 2	OPSRP	
		General Service	Police & Fire
July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern employer financial reporting for retiree healthcare obligations for fiscal years beginning after June 15, 2017. In general, the changes required by GASB 75 parallel those that occurred for pension reporting when GASB 68 replaced GASB 27. Accounting information for reporting under GASB 75 will be provided separately and is not included in this report.

Executive Summary

Principal Valuation Results

A summary of principal valuation results from the current valuation and the prior valuation follows. Any changes in actuarial assumptions, methods or plan provisions between the two valuations are described later in this report. More detailed information can be found in the system-wide actuarial valuation report.

City of Cornelius

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
T1/T2 UAL	\$2,750,410	\$2,397,850
Allocated pooled OPSRP UAL	313,735	242,477
Side account	0	0
Net unfunded pension actuarial accrued liability	3,064,145	2,640,327
Combined valuation payroll	2,206,856	2,121,002
Net pension UAL as a percentage of payroll	139%	124%
Calculated side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	\$10,716	\$16,859

In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer's combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.

Executive Summary

Principal Valuation Results (continued)

Tier 1/Tier 2

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
Normal cost	\$178,679	\$171,391
Tier 1/Tier 2 valuation payroll	1,276,241	1,234,471
Tier 1/Tier 2 pension normal cost rate	14.00%	13.88%
Tier 1/ Tier 2 Actuarial accrued liability	\$18,608,088	\$18,417,725
Actuarial asset value	15,857,678	16,019,875
Tier 1/Tier 2 Unfunded actuarial accrued liability	2,750,410	2,397,850
Tier 1/ Tier 2 Funded status	85%	87%
Combined valuation payroll	\$2,206,856	\$2,121,002
Tier 1/Tier 2 UAL as a percentage of payroll	125%	113%
Tier 1/Tier 2 UAL rate (includes Multnomah Fire District #10)	0.65%	0.77%
Tier 1/Tier 2 active members ¹	17	17
Tier 1/Tier 2 dormant members	16	14
Tier 1/Tier 2 retirees and beneficiaries	49	43

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
General service normal cost	\$342.2	\$301.3
OPSRP general service valuation payroll	4,266.9	3,720.4
General service normal cost rate	8.02%	8.10%
Police and fire normal cost	\$69.9	\$59.6
OPSRP police and fire valuation payroll	546.4	462.3
Police and fire normal cost rate	12.79%	12.90%
Actuarial accrued liability	\$3,742.5	\$3,064.1
Actuarial asset value	2,389.1	2,024.6
Unfunded actuarial accrued liability	1,353.5	1,039.5
Funded status	64%	66%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	14%	11%
UAL rate	1.27%	1.01%

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
RHIA		
Normal cost	\$3.3	\$3.5
Tier 1 / Tier 2 valuation payroll	4,730.8	4,933.1
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	\$465.6	\$468.4
Actuarial asset value	419.3	395.9
Unfunded actuarial accrued liability	46.3	72.5
Funded status	90%	85%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	0%	1%
UAL rate	0.43%	0.43%

Side Account Information

Reconciliation of Side Accounts

The following table reconciles the total side account from the beginning of the year to the end of the year. Side account transfers were calculated by PERS and made on a monthly basis. The amount of these transfers is shown in the table below.

All information in this table has been provided by PERS.

	New	Continuing	Total
1. Side account as of December 31, 2014	N/A		
2. Deposits made during 2015		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2015			
5. Side account earnings during 2015			
6. Side account as of December 31, 2015 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2015	December 31, 2014
Side account 1	\$0	\$0
Side account 2	0	0
Side account 3	0	0
Total	\$0	\$0

Development of Side Account Rate

The rate relief attributable to an employer's side account is determined by amortizing the side account balance on the valuation date over a fixed period, and expressing the result as a percentage of combined valuation payroll. For side accounts established prior to December 31, 2009, the fixed period ends December 31, 2027. For side accounts established at a later date, the fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2015	December 31, 2014
1. Total side account	\$0	\$0
2. Combined valuation payroll	2,206,856	2,121,002
3. Average Amortization factor	9.504	10.118
4. Total side account rate (-1. ÷ 2. ÷ 3.)¹	0.00%	0.00%

¹ For employers with more than one side account, the Total Side Account Rate is determined by calculating the rate on each side account separately and adding the rates together.

Tier 1/Tier 2 Valuation Results

Assets

A summary of the market value of pension assets, and reconciliation from the prior year are shown below.

Summary of Market Value of Tier 1/Tier 2 Pension Assets

	December 31, 2015	December 31, 2014
1. Member reserves	\$2,778,755	\$2,617,572
2. Employer reserves	8,919,370	8,657,529
3. Benefits in force reserve	4,159,553	4,744,774
4. Total market value of assets (1. + 2. + 3.)	\$15,857,678	\$16,019,875

The market value of member and employer reserves is provided by PERS. The benefits in force reserve provided by PERS is allocated each year among employers in proportion to their liabilities for retired members and beneficiaries.

Reconciliation of Tier 1/Tier 2 Pension Assets

	December 31, 2014 to December 31, 2015
1. Market value of assets at beginning of year	\$16,019,875
2. Regular employer contributions	112,388
3. Benefit payments and expense	(756,420)
4. Adjustments ¹	80,380
5. Interest credited	401,455
6. Total transferred from side accounts	0
7. Market value of assets at end of year (1. + 2. + 3. + 4. + 5. + 6.)	\$15,857,678

¹ Note the adjustment item above includes a reallocation of the benefits in force reserve, transfers to Multnomah Fire District #10, and other adjustments made by PERS.

Tier 1/Tier 2 Valuation Results

Liabilities

Normal Cost

The normal cost represents the value of benefits assigned to the next year of service by the actuarial cost method. If all actuarial assumptions are met, the normal cost represents the amount that would need to be contributed each year to fund plan benefits. Amounts shown below include assumed administrative expenses, which are allocated pro-rata based on normal cost.

Summary of Normal Cost by Tier/Member Classification

	December 31, 2015	December 31, 2014
Tier 1 Police & Fire	\$0	\$0
Tier 1 General Service	85,938	82,062
Tier 2 Police & Fire	16,072	14,557
Tier 2 General Service	76,669	74,772
Total	\$178,679	\$171,391

Change in Tier 1/Tier 2 Normal Cost

The following table shows the impact of the assumption, method, and plan changes on normal cost as of December 31, 2015.

	Before Changes	After Changes	Net Change
Normal Cost	\$178,679	\$178,679	\$0

Tier 1/Tier 2 Valuation Results

Liabilities

Actuarial Accrued Liability

The actuarial accrued liability represents the value of benefits allocated to service performed before the valuation date by the actuarial cost method. If all actuarial assumptions are met, the actuarial accrued liability represents the amount of assets that would need to be accumulated as of the valuation date to provide for the portion of benefits allocated to service already performed.

Summary of Actuarial Accrued Liability by Tier/Member Classification

	December 31, 2015	December 31, 2014
Active Members		
▪ Tier 1 Police & Fire	\$2,110,992	\$2,165,332
▪ Tier 1 General Service	2,879,675	3,059,853
▪ Tier 2 Police & Fire	1,143,715	1,082,370
▪ Tier 2 General Service	2,308,918	2,098,050
▪ Total Active Members	\$8,443,300	\$8,405,605
Dormant Members	1,183,518	807,376
Retired Members and Beneficiaries	8,981,270	9,204,744
Total Actuarial Accrued Liability	\$18,608,088	\$18,417,725

Change in Tier 1/Tier 2 Actuarial Accrued Liability

The following table shows the impact of the assumption, method, and plan changes on the actuarial accrued liability as of December 31, 2015.

	Before Changes	After Changes	Net Change
Actuarial Accrued Liability	\$18,608,088	\$18,608,088	\$0

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Summary of UAL

The UAL represents the difference between the assets accumulated and the liability attributed to prior years of service by the cost method.

	December 31, 2015	December 31, 2014
1. Actuarial accrued liability	\$18,608,088	\$18,417,725
2. Actuarial value of assets	15,857,678	16,019,875
3. Unfunded accrued liability (1. – 2.)	2,750,410	2,397,850
4. Funded percentage (2. ÷ 1.)	85%	87%
5. Combined valuation payroll	\$2,206,856	\$2,121,002
6. Unfunded accrued liability as % of combined valuation payroll (3. ÷ 5.)	125%	113%

Reconciliation of UAL Bases

Beginning with the December 31, 2013 actuarial valuation, each odd-year valuation establishes a 20-year closed-period amortization schedule for outstanding Tier 1/Tier 2 UAL amounts. Amortization schedules are calculated based on the total Tier 1/Tier 2 UAL as of that valuation date less the remaining unamortized balance of previously established Tier 1/Tier 2 UAL bases.

Amortization Base	UAL December 31, 2014	Payment	Interest	UAL December 31, 2015	Next Year's Payment
December 31, 2013	(\$473,866)	(\$35,496)	(\$34,122)	(\$472,492)	(\$36,738)
December 31, 2015	N/A	N/A	N/A	\$3,222,902	\$233,206
Total				\$2,750,410	\$196,468

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Actuarial Gain or Loss since Prior Valuation

The system-wide actuarial valuation report contains a detailed analysis of gains and losses since the last valuation. The table below shows the gain or loss for the individual employer.

1. Expected actuarial accrued liability	
a. Actuarial accrued liability at December 31, 2014	\$18,417,725
b. Normal cost at December 31, 2014 (excluding assumed expenses)	163,918
c. Benefit payments during 2015	(750,577)
d. Interest at 7.50% to December 31, 2015	1,359,330
e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)	19,190,396
f. Change in actuarial accrued liability due to assumption, method, and plan changes	0
g. Expected actuarial accrued liability at December 31, 2015 (e. + f.)	19,190,396
2. Actuarial accrued liability at December 31, 2015	18,608,088
3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)	582,308
4. Expected actuarial value of assets	
a. Actuarial value of assets at December 31, 2014	16,019,875
b. Contributions for 2015 ¹	112,388
c. Benefit payments and expenses during 2015	(756,420)
d. Interest at 7.50% to December 31, 2015	1,177,339
e. Expected actuarial value of assets at December 31, 2015 (a. + b. + c. + d.)	16,553,182
5. Actuarial value of assets at December 31, 2015	15,857,678
6. Gain/(loss) on actuarial value of assets (5. - 4.e.)	(695,505)
7. Total actuarial gain/(loss) (3. + 6.)	(\$113,197)

Unfunded Accrued Liability Reconciliation

A reconciliation of the Tier 1/Tier 2 UAL from December 31, 2014 is provided below.

1. UAL at December 31, 2014	\$2,397,850
2. Expected increase	239,363
3. Liability (gain)/loss	(582,308)
4. Asset (gain)/loss	695,505
5. Change due to changes in assumptions, methods, and plan provisions	0
6. UAL at December 31, 2015 (1. + 2. + 3. + 4. + 5.)	\$2,750,410

¹ Includes rate relief from side accounts.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Normal Cost Rate

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

Development of Tier 1/Tier 2 Normal Cost Rate

	December 31, 2015			December 31, 2014		
	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate
Tier 1 Police & Fire	\$0	\$0	0.00%	\$0	\$0	0.00%
Tier 1 General Service	85,938	570,449	15.06%	82,062	552,916	14.84%
Tier 2 Police & Fire	16,072	94,949	16.93%	14,557	85,749	16.98%
Tier 2 General Service	76,669	610,843	12.55%	74,772	595,806	12.55%
Total	\$178,679	\$1,276,241	14.00%	\$171,391	\$1,234,471	13.88%

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Development of Tier 1/Tier 2 UAL Rates

The UAL rate is determined by calculating the next year's scheduled payment to the UAL as a percentage of combined valuation payroll.

	December 31, 2015	December 31, 2014
1. Total Tier 1/Tier 2 UAL	\$2,750,410	\$2,397,850
2. Next year's Tier 1/Tier 2 UAL payment	196,468	172,298
3. Combined valuation payroll	2,206,856	2,121,002
4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)	8.90%	8.12%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	14.00%	13.88%
b. Tier 1/Tier 2 UAL rate	8.90%	8.12%
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate (a. + b. + c.)	23.05%	22.15%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Adjustments Due to Rate Collar and Minimum Rate Requirements

Employer contribution rates are generally limited to change by no more than the greater of 3 percent of payroll or 20 percent from the current contribution rate. However, if the funded percentage excluding side accounts is below 60 percent or above 140 percent the rate collar doubles in size. If the funded percentage excluding side accounts is between 60 and 70 percent or 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

The table below shows the current contribution rate for the period from July 1, 2015 through June 30, 2017, develops the maximum and minimum contribution rates effective July 1, 2017 based on the collar, and calculates the net adjustment due to the collar and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

1. Current net Tier 1/Tier 2 pension contribution rate		11.65%
2. Employer contribution rate attributable to side accounts		0.00%
3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)		11.65%
4. Size of rate collar		
a. 20% of current employer contribution rate (20% x 3.)		2.33%
b. Preliminary size of rate collar (maximum of 3% or a.)		3.00%
c. Funded percentage		85%
d. Size of rate collar (If c. < 60% or c. > 140%, 2 x b. If c. is 70%-130%, b. Otherwise, a graded rate between b. and 2 x b.)		3.00%
5. July 1, 2017 minimum employer contribution rate	(3. – 4.d. but not < 0%)	8.65%
6. July 1, 2017 maximum employer contribution rate	(3. + 4.d.)	14.65%
7. July 1, 2017 total pension rate, before adjustment		23.05%
8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)		(8.40%)
9. July 1, 2017 Tier 1/Tier 2 UAL rate, before collar		8.90%
10. July 1, 2017 Tier 1/Tier 2 UAL rate, after collar	(8. + 9.)	0.50%
11. July 1, 2017 Tier 1/Tier 2 pension rate, after collar		14.65%
12. Tier 1/Tier 2 retiree healthcare rate		0.50%
13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)		0.00%
14. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment		14.00%
15. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)		14.00%
16. July 1, 2017 Tier 1/Tier 2 pension rate, after minimum adjustment	(11. + 13.)	14.65%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Post-Rate Collar)

The table below summarizes the employer's pension contribution rate for Tier 1 /Tier 2 after adjustments for the rate collar and the 6 percent of payroll minimum employer contribution rate.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	14.00%	13.88%
b. Tier 1/Tier 2 UAL rate	0.50%	0.62%
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate <i>(a. + b. + c., minimum of 5.50%)</i>	14.65%	14.65%

Data

Demographic Information

Employer Valuation Payroll

	General Service	Police & Fire	Total
Tier 1	\$570,449	\$0	\$570,449
Tier 2	610,843	94,949	705,792
Tier 1/Tier 2 valuation payroll	1,181,292	94,949	1,276,241
OPSRP valuation payroll	664,652	265,963	930,615
Combined valuation payroll	\$1,845,944	\$360,912	\$2,206,856

Employer Member Census

	December 31							
	2015				2014			
	Tier 1	Tier 2	OPSRP	Total	Tier 1	Tier 2	OPSRP	Total
Active Members ¹								
General Service	7	9	15	31	7	9	13	29
Police & Fire	0	1	4	5	0	1	4	5
Total	7	10	19	36	7	10	17	34
Active Members with previous service segments with the employer								
General Service	5	12	N/A	17	6	12	N/A	18
Police & Fire	10	7	N/A	17	11	7	N/A	18
Total	15	19	N/A	34	17	19	N/A	36
Dormant Members								
General Service	6	6	0	12	5	6	0	11
Police & Fire	3	1	0	4	2	1	0	3
Total	9	7	0	16	7	7	0	14
Retired Members and Beneficiaries								
General Service	21	3	0	24	21	3	0	24
Police & Fire	24	1	0	25	19	0	0	19
Total	45	4	0	49	40	3	0	43
Grand Total Number of Members	76	40	19	135	71	39	17	127

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Data

Demographic Information (continued)

Employer Tier 1/Tier 2 Active Members as of December 31, 2015

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
<20										
20-24										
25-29										
30-34										
35-39			1	1						2
40-44				3						3
45-49			1	1	1					3
50-54					1					1
55-59			1		1	1	1			4
60-64			1	1	1					3
65-69				1						1
70-74										
75+										
Total	0	0	4	7	4	1	1	0	0	17

Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2015

Dormant Members			Retired Members and Beneficiaries		
Age	Count	Average Deferred Monthly Benefit	Age	Count	Average Monthly Benefit
<20			<45	4	1,009
20-24			45-49	2	1,009
25-29			50-54	2	282
30-34	1	232	55-59	3	778
35-39	2	16	60-64	15	1,503
40-44	1	1,526	65-69	8	873
45-49	2	1,399	70-74	6	1,962
50-54	3	179	75-79	4	920
55-59	4	476	80-84	2	2,222
60-64	2	1,262	85-89	3	438
65-69	1	0	90-94		
70-74			95-99		
75+			100+		
Total	16	597	Total	49	1,218

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2015 valuation can be found in the system-wide actuarial valuation report.

Actuarial Methods and Valuation Procedures

A brief summary of the methods used in this valuation is shown below:

<i>Actuarial cost method</i>	Entry Age Normal.
<i>Amortization Method</i>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. Gains and losses between subsequent odd-year valuations will be amortized as a level percentage of projected combined valuation payroll over a closed 20 year period.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.</p>

Economic Assumptions

A brief summary of the key economic assumptions used in this valuation is shown below:

<i>Net investment return</i>	7.50% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.50% compounded annually on members' regular account balances.</p> <p>7.50% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 6.3% in 2016 to 4.4% in 2094.
<i>Administrative Expenses</i>	<p>\$5.5 million added to OPSRP normal cost.</p> <p>\$33.0 million added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2014 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

There were no changes in actuarial methods and allocation procedures since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA actuarial methods and allocation procedures is provided as part of the system-wide valuation report.

Changes in Assumptions

There were no changes in assumptions since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA assumptions is provided as part of the system-wide valuation report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Glossary

Actuarial Accrued Liability

The portion of the present value of prospective benefits allocated to service and compensation before the valuation date in accordance with the actuarial cost method.

Actuarial Asset Value

The value of assets used in calculating the required contributions. The actuarial asset value may be equal to the fair market value of assets, or it may spread the recognition of certain investment gains or losses over a period of years in accordance with an asset valuation method.

Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disablement and retirement; rates of investment earnings and other relevant items.

Actuarial Cost Method

Sometimes called “funding method,” a particular technique used by actuaries to establish the amount and incidence of the annual actuarial cost of pension plan benefits, or normal cost, and the related unfunded actuarial accrued liability. Ordinarily, the annual contribution to the plan comprises the normal cost and an amount for amortization of the unfunded actuarial accrued liability.

Actuarial Gain or (Loss)

A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions, during the period between two actuarial valuation dates, as determined in accordance with a particular actuarial cost method.

Combined Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for both Tier 1/Tier 2 and OPSRP active members. This payroll is used to calculate UAL rates.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

Employer Contribution Rate

Consists of the normal cost rate and the UAL rates, plus adjustments for other items such as side account rate offsets.

Funded Status

The actuarial value of assets expressed as a percentage of the actuarial accrued liability.

Normal Cost

The annual cost allocated to the current year, under the actuarial cost method in use. The normal cost divided by the applicable payroll is the normal cost rate.

OPSRP Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for OPSRP active members. This payroll is used to calculate OPSRP normal cost rates.

Glossary

Pre-SLGRP Liability

The sum of Pre-SLGRP Pooled Liabilities and Transition Liabilities.

Pre-SLGRP Pooled Liability

The difference between the total UAL and the UAL attributable to the SLGRP for a pool of employers that joined the SLGRP. There are currently two pre-SLGRP pools. One was created for State Agencies and Community Colleges when the SLGRP was formed. The other one was created when the Local Government Rate Pool joined the SLGRP.

Present Value

Sometimes called “actuarial present value,” the estimated cost (as of the valuation date) of a series of future payments. The present value is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Rate Collar

A methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution rate and funded status.

Required Supplementary Information (RSI)

Schedules, statistical data, and other information that are an essential part of financial reporting and should be presented with, but are not part of, the basic financial statements of a governmental entity.

Statement No. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions.

Statement No. 68 of the Governmental Accounting Standards Board (GASB 68)

The accounting standard governing a state or local governmental employer’s accounting for pensions for fiscal years beginning after June 15, 2014.

Statement No. 75 of the Governmental Accounting Standards Board (GASB 75)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

The difference between the total UAL and the UAL attributable to the SLGRP for an individual employer that joined the SLGRP or the Local Government Rate Pool.

Unfunded Accrued Liability (UAL)

The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. The UAL is divided by combined valuation payroll and an amortization factor to determine an initial pre-collar UAL rate. The final UAL rate can be adjusted by the rate collar.



Milliman
111 SW Fifth Avenue, Suite 3700
Portland, OR 97204-3654
503 227 0634

This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

September 2016

City of Cottage Grove/2127
Oregon Public Employees Retirement System

Dear Sir or Madam:

As part of our engagement with the Oregon Public Employees Retirement Board, we performed a system-wide actuarial valuation of the Oregon Public Employees Retirement System (“PERS” or “the System”) as of December 31, 2015. The attached report, which is an informational supplement to the system-wide report, provides you with employer-specific contribution rates that will become effective July 1, 2017. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information will be provided separately by PERS and is not included in this report.

This report reflects the System's benefit provisions in effect as of December 31, 2015. The full development of the valuation results for the OPSRP and Retiree Health Insurance Account (RHIA) programs can be found in the separate system-wide actuarial valuation report. Costs of the IAP (Individual Account Program) are not included in this or the system-wide actuarial valuation report. Further, costs of pension obligation bond payments are not included in this or the system-wide actuarial valuation report.

If you have any questions about this report, please contact Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, OPSRP general service, and OPSRP police and fire payroll,
- Information to assist you in completing GASB 45 financial reporting requirements, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- Detailed development of Tier 1/Tier 2 valuation results,
- A brief summary of methods and assumptions, and
- A brief summary of any changes in System benefit provisions.

Additional information is provided in the system-wide actuarial valuation report, which is available at www.oregon.gov/PERS/Pages/section/financial_reports/financials.aspx.



September 2016
City of Cottage Grove/2127

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the System's staff. This information includes, but is not limited to, System benefit provisions as defined by statute, member census data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for the System have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer a reasonable estimate of anticipated experience affecting the System.

A valuation report is only an estimate of the System's financial condition as of a single date. It can neither predict the System's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of System benefits, only the timing of System contributions. While a valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: System experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the System's funded status); and changes in System benefit provisions or applicable law. Due to the limited scope of this assignment, we did not perform an analysis of the potential range of future measurements. The Board has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in September 2015.

Some of the actuarial computations presented in this report are for purposes of determining the contribution rates effective from July 2017 to June 2019 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.



September 2016
City of Cottage Grove/2127

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the System. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

Additional information is provided in the system-wide actuarial valuation report.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Larrabee".

Matt Larrabee, FSA, EA, MAAA
Principal and Consulting Actuary

A handwritten signature in black ink, appearing to read "Scott Preppernau".

Scott Preppernau, FSA, EA, MAAA
Principal and Consulting Actuary



ACTUARIAL VALUATION REPORT DECEMBER 31, 2015

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

INDEPENDENT EMPLOYERS

City of Cottage Grove -- #2127

September 2016

CONTENTS

- Executive Summary** **1**
- Employer Contribution Rates* 1
- Accounting Information* 3
- Principal Valuation Results* 5
- Employer 5
- Tier 1/Tier 2 6
- OPSRP 7
- Retiree Healthcare 7
- Side Account Information** **8**
- Tier 1/Tier 2 Valuation Results** **10**
- Assets* 10
- Liabilities* 11
- Unfunded Accrued Liability (UAL)* 13
- Contribution Rate Development* 15
- Data** **20**
- Brief Summary of Actuarial Methods and Assumptions** **22**
- Brief Summary of Changes in Plan Provisions** **24**
- Glossary** **25**

Executive Summary

Milliman has prepared this report for City of Cottage Grove to:

- Provide summary December 31, 2015 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2017 through June 30, 2019,
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2015, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45. GASB 68 information will be provided separately by PERS and is not included in this report.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2015 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to City of Cottage Grove.

Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2017 through June 30, 2019 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

Employer Rates Effective July 1, 2017 for City of Cottage Grove

	Payroll		
	Tier 1/Tier 2	OPSRP General Service	Police & Fire
Pension			
Normal cost rate	18.42%	8.02%	12.79%
Tier 1/Tier 2 UAL rate ¹	1.38%	1.38%	1.38%
OPSRP UAL rate	1.27%	1.27%	1.27%
Side account rate relief	0.00%	0.00%	0.00%
Net pension contribution rate	21.07%	10.67%	15.44%
Retiree Healthcare			
Normal cost rate	0.07%	0.00%	0.00%
UAL rate	0.43%	0.43%	0.43%
Net retiree healthcare rate	0.50%	0.43%	0.43%
Total net employer contribution rate	21.57%	11.10%	15.87%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate.

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 Biennium

The rate collar limits changes in contribution rates, but does not limit changes in rates for individual employers related to side accounts. The table below shows the possible minimum and maximum rates first effective as of July 1, 2019, which will depend on the funded status as of December 31, 2017. If the employer's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2015 is 80%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	19.80%	19.80%
Minimum 2019-2021 Rate	15.84%	11.88%
Maximum 2019-2021 Rate	23.76%	27.72%

Executive Summary

Accounting Information

Milliman is not an accounting or audit firm and cannot provide accounting advice. Milliman is not responsible for the interpretation of, or compliance with, accounting standards; citations to, and descriptions of accounting standards provided in this report are for reference purposes only. The information provided in this section is intended to assist the employer in completing its financial statements, but any accounting determination should be reviewed by your auditor.

Pension

In June 2012 the GASB issued Statement No. 68, which replaced GASB 27 and governs employer financial reporting for fiscal years beginning after June 15, 2014. The new standard replaced many of the key elements of the prior reporting requirements. Under the new rules, employers are required to record a balance sheet liability for their unfunded pension obligations. In addition, the timing and coordination of plan and employer reporting has changed under the new requirements. GASB 68 information for employers will be provided separately by PERS and is not included in this report.

Schedule of Funding Progress

Under GASB 27, the Schedule of Funding Progress for Tier 1/Tier 2 pension liabilities was reported in the Required Supplementary Information. This schedule is no longer required now that GASB 68 has replaced GASB 27. However, for additional information and the sake of historical comparison, the updated schedule is shown below for the last several valuations. For employers with side accounts, the actuarial value of assets in this Schedule includes the value of the employer's side accounts.

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (b - a)	Funded Ratio (a ÷ b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a) ÷ c)
12/31/2010	\$31,425,921	\$34,333,400	\$2,907,479	92%	\$3,750,985	78%
12/31/2011	31,039,561	35,814,645	4,775,084	87%	3,832,180	125%
12/31/2012	34,036,351	35,941,947	1,905,596	95%	4,097,780	47%
12/31/2013	37,269,216	37,629,931	360,715	99%	4,087,108	9%
12/31/2014	37,939,466	44,292,348	6,352,882	86%	3,965,429	160%
12/31/2015	36,599,494	45,963,462	9,363,968	80%	4,112,295	228%

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) is a cost-sharing pool under Statement No. 45 of the Governmental Accounting Standards Board (GASB 45). Consequently, each employer reports the contractually required contribution. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 was calculated as a part of this valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
	Tier 1 / Tier 2	OPSRP	
		General Service	Police & Fire
July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern employer financial reporting for retiree healthcare obligations for fiscal years beginning after June 15, 2017. In general, the changes required by GASB 75 parallel those that occurred for pension reporting when GASB 68 replaced GASB 27. Accounting information for reporting under GASB 75 will be provided separately and is not included in this report.

Executive Summary

Principal Valuation Results

A summary of principal valuation results from the current valuation and the prior valuation follows. Any changes in actuarial assumptions, methods or plan provisions between the two valuations are described later in this report. More detailed information can be found in the system-wide actuarial valuation report.

City of Cottage Grove

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
T1/T2 UAL	\$9,363,968	\$6,352,882
Allocated pooled OPSRP UAL	584,620	453,335
Side account	0	0
Net unfunded pension actuarial accrued liability	9,948,588	6,806,217
Combined valuation payroll	4,112,295	3,965,429
Net pension UAL as a percentage of payroll	242%	172%
Calculated side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	\$19,968	\$31,520

In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer’s combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.

Executive Summary

Principal Valuation Results (continued)

Tier 1/Tier 2

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
Normal cost	\$423,130	\$449,900
Tier 1/Tier 2 valuation payroll	2,296,733	2,461,719
Tier 1/Tier 2 pension normal cost rate	18.42%	18.28%
Tier 1/ Tier 2 Actuarial accrued liability	\$45,963,462	\$44,292,348
Actuarial asset value	36,599,494	37,939,466
Tier 1/Tier 2 Unfunded actuarial accrued liability	9,363,968	6,352,882
Tier 1/ Tier 2 Funded status	80%	86%
Combined valuation payroll	\$4,112,295	\$3,965,429
Tier 1/Tier 2 UAL as a percentage of payroll	228%	160%
Tier 1/Tier 2 UAL rate (includes Multnomah Fire District #10)	1.38%	1.52%
Tier 1/Tier 2 active members ¹	34	39
Tier 1/Tier 2 dormant members	24	24
Tier 1/Tier 2 retirees and beneficiaries	112	105

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
General service normal cost	\$342.2	\$301.3
OPSRP general service valuation payroll	4,266.9	3,720.4
General service normal cost rate	8.02%	8.10%
Police and fire normal cost	\$69.9	\$59.6
OPSRP police and fire valuation payroll	546.4	462.3
Police and fire normal cost rate	12.79%	12.90%
Actuarial accrued liability	\$3,742.5	\$3,064.1
Actuarial asset value	2,389.1	2,024.6
Unfunded actuarial accrued liability	1,353.5	1,039.5
Funded status	64%	66%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	14%	11%
UAL rate	1.27%	1.01%

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
RHIA		
Normal cost	\$3.3	\$3.5
Tier 1 / Tier 2 valuation payroll	4,730.8	4,933.1
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	\$465.6	\$468.4
Actuarial asset value	419.3	395.9
Unfunded actuarial accrued liability	46.3	72.5
Funded status	90%	85%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	0%	1%
UAL rate	0.43%	0.43%

Side Account Information

Reconciliation of Side Accounts

The following table reconciles the total side account from the beginning of the year to the end of the year. Side account transfers were calculated by PERS and made on a monthly basis. The amount of these transfers is shown in the table below.

All information in this table has been provided by PERS.

	New	Continuing	Total
1. Side account as of December 31, 2014	N/A		
2. Deposits made during 2015		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2015			
5. Side account earnings during 2015			
6. Side account as of December 31, 2015 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2015	December 31, 2014
Side account 1	\$0	\$0
Side account 2	0	0
Side account 3	0	0
Total	\$0	\$0

Development of Side Account Rate

The rate relief attributable to an employer's side account is determined by amortizing the side account balance on the valuation date over a fixed period, and expressing the result as a percentage of combined valuation payroll. For side accounts established prior to December 31, 2009, the fixed period ends December 31, 2027. For side accounts established at a later date, the fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2015	December 31, 2014
1. Total side account	\$0	\$0
2. Combined valuation payroll	4,112,295	3,965,429
3. Average Amortization factor	9.504	10.118
4. Total side account rate (-1. ÷ 2. ÷ 3.)¹	0.00%	0.00%

¹ For employers with more than one side account, the Total Side Account Rate is determined by calculating the rate on each side account separately and adding the rates together.

Tier 1/Tier 2 Valuation Results

Assets

A summary of the market value of pension assets, and reconciliation from the prior year are shown below.

Summary of Market Value of Tier 1/Tier 2 Pension Assets

	December 31, 2015	December 31, 2014
1. Member reserves	\$4,743,580	\$5,465,288
2. Employer reserves	17,905,784	18,530,242
3. Benefits in force reserve	13,950,130	13,943,936
4. Total market value of assets (1. + 2. + 3.)	\$36,599,494	\$37,939,466

The market value of member and employer reserves is provided by PERS. The benefits in force reserve provided by PERS is allocated each year among employers in proportion to their liabilities for retired members and beneficiaries.

Reconciliation of Tier 1/Tier 2 Pension Assets

	December 31, 2014 to December 31, 2015
1. Market value of assets at beginning of year	\$37,939,466
2. Regular employer contributions	400,023
3. Benefit payments and expense	(2,536,849)
4. Adjustments ¹	(120,440)
5. Interest credited	917,293
6. Total transferred from side accounts	0
7. Market value of assets at end of year (1. + 2. + 3. + 4. + 5. + 6.)	\$36,599,494

¹ Note the adjustment item above includes a reallocation of the benefits in force reserve, transfers to Multnomah Fire District #10, and other adjustments made by PERS.

Tier 1/Tier 2 Valuation Results

Liabilities

Normal Cost

The normal cost represents the value of benefits assigned to the next year of service by the actuarial cost method. If all actuarial assumptions are met, the normal cost represents the amount that would need to be contributed each year to fund plan benefits. Amounts shown below include assumed administrative expenses, which are allocated pro-rata based on normal cost.

Summary of Normal Cost by Tier/Member Classification

	December 31, 2015	December 31, 2014
Tier 1 Police & Fire	\$89,143	\$84,617
Tier 1 General Service	206,191	216,093
Tier 2 Police & Fire	28,775	40,178
Tier 2 General Service	99,021	109,012
Total	\$423,130	\$449,900

Change in Tier 1/Tier 2 Normal Cost

The following table shows the impact of the assumption, method, and plan changes on normal cost as of December 31, 2015.

	Before Changes	After Changes	Net Change
Normal Cost	\$423,130	\$423,130	\$0

Tier 1/Tier 2 Valuation Results

Liabilities

Actuarial Accrued Liability

The actuarial accrued liability represents the value of benefits allocated to service performed before the valuation date by the actuarial cost method. If all actuarial assumptions are met, the actuarial accrued liability represents the amount of assets that would need to be accumulated as of the valuation date to provide for the portion of benefits allocated to service already performed.

Summary of Actuarial Accrued Liability by Tier/Member Classification

	December 31, 2015	December 31, 2014
Active Members		
▪ Tier 1 Police & Fire	\$4,557,596	\$5,632,980
▪ Tier 1 General Service	5,615,564	5,888,179
▪ Tier 2 Police & Fire	784,041	828,635
▪ Tier 2 General Service	2,664,860	2,530,449
▪ Total Active Members	\$13,622,061	\$14,880,243
Dormant Members	2,220,400	2,361,214
Retired Members and Beneficiaries	30,121,001	27,050,891
Total Actuarial Accrued Liability	\$45,963,462	\$44,292,348

Change in Tier 1/Tier 2 Actuarial Accrued Liability

The following table shows the impact of the assumption, method, and plan changes on the actuarial accrued liability as of December 31, 2015.

	Before Changes	After Changes	Net Change
Actuarial Accrued Liability	\$45,963,462	\$45,963,462	\$0

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Summary of UAL

The UAL represents the difference between the assets accumulated and the liability attributed to prior years of service by the cost method.

	December 31, 2015	December 31, 2014
1. Actuarial accrued liability	\$45,963,462	\$44,292,348
2. Actuarial value of assets	36,599,494	37,939,466
3. Unfunded accrued liability (1. – 2.)	9,363,968	6,352,882
4. Funded percentage (2. ÷ 1.)	80%	86%
5. Combined valuation payroll	\$4,112,295	\$3,965,429
6. Unfunded accrued liability as % of combined valuation payroll (3. ÷ 5.)	228%	160%

Reconciliation of UAL Bases

Beginning with the December 31, 2013 actuarial valuation, each odd-year valuation establishes a 20-year closed-period amortization schedule for outstanding Tier 1/Tier 2 UAL amounts. Amortization schedules are calculated based on the total Tier 1/Tier 2 UAL as of that valuation date less the remaining unamortized balance of previously established Tier 1/Tier 2 UAL bases.

Amortization Base	UAL December 31, 2014	Payment	Interest	UAL December 31, 2015	Next Year's Payment
December 31, 2013	\$361,485	\$27,078	\$26,030	\$360,437	\$28,026
December 31, 2015	N/A	N/A	N/A	\$9,003,531	\$651,486
Total				\$9,363,968	\$679,512

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Actuarial Gain or Loss since Prior Valuation

The system-wide actuarial valuation report contains a detailed analysis of gains and losses since the last valuation. The table below shows the gain or loss for the individual employer.

1. Expected actuarial accrued liability	
a. Actuarial accrued liability at December 31, 2014	\$44,292,348
b. Normal cost at December 31, 2014 (excluding assumed expenses)	430,272
c. Benefit payments during 2015	(2,517,254)
d. Interest at 7.50% to December 31, 2015	3,243,664
e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)	45,449,030
f. Change in actuarial accrued liability due to assumption, method, and plan changes	0
g. Expected actuarial accrued liability at December 31, 2015 (e. + f.)	45,449,030
2. Actuarial accrued liability at December 31, 2015	45,963,462
3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)	(514,432)
4. Expected actuarial value of assets	
a. Actuarial value of assets at December 31, 2014	37,939,466
b. Contributions for 2015 ¹	400,023
c. Benefit payments and expenses during 2015	(2,536,849)
d. Interest at 7.50% to December 31, 2015	2,765,329
e. Expected actuarial value of assets at December 31, 2015 (a. + b. + c. + d.)	38,567,970
5. Actuarial value of assets at December 31, 2015	36,599,494
6. Gain/(loss) on actuarial value of assets (5. - 4.e.)	(1,968,476)
7. Total actuarial gain/(loss) (3. + 6.)	(\$2,482,908)

Unfunded Accrued Liability Reconciliation

A reconciliation of the Tier 1/Tier 2 UAL from December 31, 2014 is provided below.

1. UAL at December 31, 2014	\$6,352,882
2. Expected increase	528,178
3. Liability (gain)/loss	514,432
4. Asset (gain)/loss	1,968,476
5. Change due to changes in assumptions, methods, and plan provisions	0
6. UAL at December 31, 2015 (1. + 2. + 3. + 4. + 5.)	\$9,363,968

¹ Includes rate relief from side accounts.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Normal Cost Rate

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

Development of Tier 1/Tier 2 Normal Cost Rate

	December 31, 2015			December 31, 2014		
	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate
Tier 1 Police & Fire	\$89,143	\$407,516	21.87%	\$84,617	\$386,382	21.90%
Tier 1 General Service	206,191	949,242	21.72%	216,093	991,733	21.79%
Tier 2 Police & Fire	28,775	154,890	18.58%	40,178	216,527	18.56%
Tier 2 General Service	99,021	785,085	12.61%	109,012	867,077	12.57%
Total	\$423,130	\$2,296,733	18.42%	\$449,900	\$2,461,719	18.28%

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Development of Tier 1/Tier 2 UAL Rates

The UAL rate is determined by calculating the next year's scheduled payment to the UAL as a percentage of combined valuation payroll.

	December 31, 2015	December 31, 2014
1. Total Tier 1/Tier 2 UAL	\$9,363,968	\$6,352,882
2. Next year's Tier 1/Tier 2 UAL payment	679,512	460,609
3. Combined valuation payroll	4,112,295	3,965,429
4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)	16.52%	11.62%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	18.42%	18.28%
b. Tier 1/Tier 2 UAL rate	16.52%	11.62%
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate	35.09%	30.05%
(a. + b. + c.)		

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Adjustments Due to Rate Collar and Minimum Rate Requirements

Employer contribution rates are generally limited to change by no more than the greater of 3 percent of payroll or 20 percent from the current contribution rate. However, if the funded percentage excluding side accounts is below 60 percent or above 140 percent the rate collar doubles in size. If the funded percentage excluding side accounts is between 60 and 70 percent or 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

The table below shows the current contribution rate for the period from July 1, 2015 through June 30, 2017, develops the maximum and minimum contribution rates effective July 1, 2017 based on the collar, and calculates the net adjustment due to the collar and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

1. Current net Tier 1/Tier 2 pension contribution rate		16.50%
2. Employer contribution rate attributable to side accounts		0.00%
3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)		16.50%
4. Size of rate collar		
a. 20% of current employer contribution rate (20% x 3.)		3.30%
b. Preliminary size of rate collar (maximum of 3% or a.)		3.30%
c. Funded percentage		80%
d. Size of rate collar (If c. < 60% or c. > 140%, 2 x b. If c. is 70%-130%, b. Otherwise, a graded rate between b. and 2 x b.)		3.30%
5. July 1, 2017 minimum employer contribution rate	(3. – 4.d. but not < 0%)	13.20%
6. July 1, 2017 maximum employer contribution rate	(3. + 4.d.)	19.80%
7. July 1, 2017 total pension rate, before adjustment		35.09%
8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)		(15.29%)
9. July 1, 2017 Tier 1/Tier 2 UAL rate, before collar		16.52%
10. July 1, 2017 Tier 1/Tier 2 UAL rate, after collar	(8. + 9.)	1.23%
11. July 1, 2017 Tier 1/Tier 2 pension rate, after collar		19.80%
12. Tier 1/Tier 2 retiree healthcare rate		0.50%
13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)		0.00%
14. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment		18.42%
15. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)		18.42%
16. July 1, 2017 Tier 1/Tier 2 pension rate, after minimum adjustment	(11. + 13.)	19.80%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Post-Rate Collar)

The table below summarizes the employer's pension contribution rate for Tier 1 /Tier 2 after adjustments for the rate collar and the 6 percent of payroll minimum employer contribution rate.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	18.42%	18.28%
b. Tier 1/Tier 2 UAL rate	1.23%	1.37%
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate <i>(a. + b. + c., minimum of 5.50%)</i>	19.80%	19.80%

Data

Demographic Information

Employer Valuation Payroll

	General Service	Police & Fire	Total
Tier 1	\$949,242	\$407,516	\$1,356,758
Tier 2	785,085	154,890	939,975
Tier 1/Tier 2 valuation payroll	1,734,327	562,406	2,296,733
OPSRP valuation payroll	1,337,634	477,928	1,815,562
Combined valuation payroll	\$3,071,961	\$1,040,334	\$4,112,295

Employer Member Census

	December 31							
	2015				2014			
	Tier 1	Tier 2	OPSRP	Total	Tier 1	Tier 2	OPSRP	Total
Active Members ¹								
General Service	13	14	33	60	14	16	24	54
Police & Fire	5	2	7	14	6	3	7	16
Total	18	16	40	74	20	19	31	70
Active Members with previous service segments with the employer								
General Service	6	14	N/A	20	8	13	N/A	21
Police & Fire	12	8	N/A	20	13	7	N/A	20
Total	18	22	N/A	40	21	20	N/A	41
Dormant Members								
General Service	12	6	5	23	12	7	4	23
Police & Fire	3	3	1	7	3	2	0	5
Total	15	9	6	30	15	9	4	28
Retired Members and Beneficiaries								
General Service	56	5	1	62	55	1	0	56
Police & Fire	49	2	0	51	47	2	0	49
Total	105	7	1	113	102	3	0	105
Grand Total Number of Members	156	54	47	257	158	51	35	244

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Data

Demographic Information (continued)

Employer Tier 1/Tier 2 Active Members as of December 31, 2015

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
<20										
20-24										
25-29										
30-34										
35-39			1	2						3
40-44			1	3						4
45-49				2	2					4
50-54			2	1	1	2				6
55-59			1	1	2	1		2		7
60-64			1	2	3			2		8
65-69				1	1					2
70-74										
75+										
Total	0	0	6	12	9	3	0	4	0	34

Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2015

Dormant Members			Retired Members and Beneficiaries		
Age	Count	Average Deferred Monthly Benefit	Age	Count	Average Monthly Benefit
<20			<45		
20-24			45-49		
25-29			50-54	4	1,794
30-34			55-59	13	2,682
35-39			60-64	27	1,470
40-44	2	638	65-69	29	1,807
45-49	7	887	70-74	18	1,876
50-54	4	1,312	75-79	8	851
55-59	5	197	80-84	8	1,111
60-64	5	1,115	85-89	4	1,005
65-69	1	452	90-94	1	42
70-74			95-99		
75+			100+		
Total	24	823	Total	112	1,676

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2015 valuation can be found in the system-wide actuarial valuation report.

Actuarial Methods and Valuation Procedures

A brief summary of the methods used in this valuation is shown below:

<i>Actuarial cost method</i>	Entry Age Normal.
<i>Amortization Method</i>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. Gains and losses between subsequent odd-year valuations will be amortized as a level percentage of projected combined valuation payroll over a closed 20 year period.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.</p>

Economic Assumptions

A brief summary of the key economic assumptions used in this valuation is shown below:

<i>Net investment return</i>	7.50% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.50% compounded annually on members' regular account balances.</p> <p>7.50% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 6.3% in 2016 to 4.4% in 2094.
<i>Administrative Expenses</i>	<p>\$5.5 million added to OPSRP normal cost.</p> <p>\$33.0 million added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2014 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

There were no changes in actuarial methods and allocation procedures since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA actuarial methods and allocation procedures is provided as part of the system-wide valuation report.

Changes in Assumptions

There were no changes in assumptions since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA assumptions is provided as part of the system-wide valuation report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Glossary

Actuarial Accrued Liability

The portion of the present value of prospective benefits allocated to service and compensation before the valuation date in accordance with the actuarial cost method.

Actuarial Asset Value

The value of assets used in calculating the required contributions. The actuarial asset value may be equal to the fair market value of assets, or it may spread the recognition of certain investment gains or losses over a period of years in accordance with an asset valuation method.

Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disablement and retirement; rates of investment earnings and other relevant items.

Actuarial Cost Method

Sometimes called “funding method,” a particular technique used by actuaries to establish the amount and incidence of the annual actuarial cost of pension plan benefits, or normal cost, and the related unfunded actuarial accrued liability. Ordinarily, the annual contribution to the plan comprises the normal cost and an amount for amortization of the unfunded actuarial accrued liability.

Actuarial Gain or (Loss)

A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions, during the period between two actuarial valuation dates, as determined in accordance with a particular actuarial cost method.

Combined Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for both Tier 1/Tier 2 and OPSRP active members. This payroll is used to calculate UAL rates.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

Employer Contribution Rate

Consists of the normal cost rate and the UAL rates, plus adjustments for other items such as side account rate offsets.

Funded Status

The actuarial value of assets expressed as a percentage of the actuarial accrued liability.

Normal Cost

The annual cost allocated to the current year, under the actuarial cost method in use. The normal cost divided by the applicable payroll is the normal cost rate.

OPSRP Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for OPSRP active members. This payroll is used to calculate OPSRP normal cost rates.

Glossary

Pre-SLGRP Liability

The sum of Pre-SLGRP Pooled Liabilities and Transition Liabilities.

Pre-SLGRP Pooled Liability

The difference between the total UAL and the UAL attributable to the SLGRP for a pool of employers that joined the SLGRP. There are currently two pre-SLGRP pools. One was created for State Agencies and Community Colleges when the SLGRP was formed. The other one was created when the Local Government Rate Pool joined the SLGRP.

Present Value

Sometimes called “actuarial present value,” the estimated cost (as of the valuation date) of a series of future payments. The present value is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Rate Collar

A methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution rate and funded status.

Required Supplementary Information (RSI)

Schedules, statistical data, and other information that are an essential part of financial reporting and should be presented with, but are not part of, the basic financial statements of a governmental entity.

Statement No. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions.

Statement No. 68 of the Governmental Accounting Standards Board (GASB 68)

The accounting standard governing a state or local governmental employer’s accounting for pensions for fiscal years beginning after June 15, 2014.

Statement No. 75 of the Governmental Accounting Standards Board (GASB 75)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

The difference between the total UAL and the UAL attributable to the SLGRP for an individual employer that joined the SLGRP or the Local Government Rate Pool.

Unfunded Accrued Liability (UAL)

The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. The UAL is divided by combined valuation payroll and an amortization factor to determine an initial pre-collar UAL rate. The final UAL rate can be adjusted by the rate collar.



Milliman
111 SW Fifth Avenue, Suite 3700
Portland, OR 97204-3654
503 227 0634

This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

September 2016

City of Culver/2257
Oregon Public Employees Retirement System

Dear Sir or Madam:

As part of our engagement with the Oregon Public Employees Retirement Board, we performed a system-wide actuarial valuation of the Oregon Public Employees Retirement System (“PERS” or “the System”) as of December 31, 2015. The attached report, which is an informational supplement to the system-wide report, provides you with employer-specific contribution rates that will become effective July 1, 2017. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information will be provided separately by PERS and is not included in this report.

This report reflects the System's benefit provisions in effect as of December 31, 2015. The full development of the valuation results for the OPSRP and Retiree Health Insurance Account (RHIA) programs can be found in the separate system-wide actuarial valuation report. Costs of the IAP (Individual Account Program) are not included in this or the system-wide actuarial valuation report. Further, costs of pension obligation bond payments are not included in this or the system-wide actuarial valuation report.

If you have any questions about this report, please contact Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, OPSRP general service, and OPSRP police and fire payroll,
- Information to assist you in completing GASB 45 financial reporting requirements, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- Detailed development of Tier 1/Tier 2 valuation results,
- A brief summary of methods and assumptions, and
- A brief summary of any changes in System benefit provisions.

Additional information is provided in the system-wide actuarial valuation report, which is available at www.oregon.gov/PERS/Pages/section/financial_reports/financials.aspx.

September 2016
City of Culver/2257

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the System's staff. This information includes, but is not limited to, System benefit provisions as defined by statute, member census data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for the System have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer a reasonable estimate of anticipated experience affecting the System.

A valuation report is only an estimate of the System's financial condition as of a single date. It can neither predict the System's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of System benefits, only the timing of System contributions. While a valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: System experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the System's funded status); and changes in System benefit provisions or applicable law. Due to the limited scope of this assignment, we did not perform an analysis of the potential range of future measurements. The Board has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in September 2015.

Some of the actuarial computations presented in this report are for purposes of determining the contribution rates effective from July 2017 to June 2019 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.



September 2016
City of Culver/2257

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the System. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

Additional information is provided in the system-wide actuarial valuation report.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Larrabee".

Matt Larrabee, FSA, EA, MAAA
Principal and Consulting Actuary

A handwritten signature in black ink, appearing to read "Scott Preppernau".

Scott Preppernau, FSA, EA, MAAA
Principal and Consulting Actuary



ACTUARIAL VALUATION REPORT DECEMBER 31, 2015

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

INDEPENDENT EMPLOYERS

City of Culver -- #2257

September 2016

CONTENTS

- Executive Summary** **1**
- Employer Contribution Rates* 1
- Accounting Information* 3
- Principal Valuation Results* 5
- Employer 5
- Tier 1/Tier 2 6
- OPSRP 7
- Retiree Healthcare 7
- Side Account Information** **8**
- Tier 1/Tier 2 Valuation Results** **10**
- Assets* 10
- Liabilities* 11
- Unfunded Accrued Liability (UAL)* 13
- Contribution Rate Development* 15
- Data** **20**
- Brief Summary of Actuarial Methods and Assumptions** **22**
- Brief Summary of Changes in Plan Provisions** **24**
- Glossary** **25**

Executive Summary

Milliman has prepared this report for City of Culver to:

- Provide summary December 31, 2015 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2017 through June 30, 2019,
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2015, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45. GASB 68 information will be provided separately by PERS and is not included in this report.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2015 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to City of Culver.

Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2017 through June 30, 2019 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

Employer Rates Effective July 1, 2017 for City of Culver

	Payroll		
	Tier 1/Tier 2	OPSRP	
		General Service	Police & Fire
Pension			
Normal cost rate	13.01%	8.02%	12.79%
Tier 1/Tier 2 UAL rate ¹	6.00%	6.00%	6.00%
OPSRP UAL rate	1.27%	1.27%	1.27%
Side account rate relief	0.00%	0.00%	0.00%
Net pension contribution rate	20.28%	15.29%	20.06%
Retiree Healthcare			
Normal cost rate	0.07%	0.00%	0.00%
UAL rate	0.43%	0.43%	0.43%
Net retiree healthcare rate	0.50%	0.43%	0.43%
Total net employer contribution rate	20.78%	15.72%	20.49%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate.

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 Biennium

The rate collar limits changes in contribution rates, but does not limit changes in rates for individual employers related to side accounts. The table below shows the possible minimum and maximum rates first effective as of July 1, 2019, which will depend on the funded status as of December 31, 2017. If the employer's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2015 is 51%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	19.01%	19.01%
Minimum 2019-2021 Rate	15.21%	11.41%
Maximum 2019-2021 Rate	22.81%	26.61%

Executive Summary

Accounting Information

Milliman is not an accounting or audit firm and cannot provide accounting advice. Milliman is not responsible for the interpretation of, or compliance with, accounting standards; citations to, and descriptions of accounting standards provided in this report are for reference purposes only. The information provided in this section is intended to assist the employer in completing its financial statements, but any accounting determination should be reviewed by your auditor.

Pension

In June 2012 the GASB issued Statement No. 68, which replaced GASB 27 and governs employer financial reporting for fiscal years beginning after June 15, 2014. The new standard replaced many of the key elements of the prior reporting requirements. Under the new rules, employers are required to record a balance sheet liability for their unfunded pension obligations. In addition, the timing and coordination of plan and employer reporting has changed under the new requirements. GASB 68 information for employers will be provided separately by PERS and is not included in this report.

Schedule of Funding Progress

Under GASB 27, the Schedule of Funding Progress for Tier 1/Tier 2 pension liabilities was reported in the Required Supplementary Information. This schedule is no longer required now that GASB 68 has replaced GASB 27. However, for additional information and the sake of historical comparison, the updated schedule is shown below for the last several valuations. For employers with side accounts, the actuarial value of assets in this Schedule includes the value of the employer's side accounts.

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (b - a)	Funded Ratio (a ÷ b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a) ÷ c)
12/31/2010	\$502,571	\$642,042	\$139,471	78%	\$102,486	136%
12/31/2011	498,653	673,446	174,793	74%	108,081	162%
12/31/2012	563,057	653,919	90,862	86%	119,064	76%
12/31/2013	594,728	683,048	88,320	87%	107,541	82%
12/31/2014	618,520	839,407	220,887	74%	118,163	187%
12/31/2015	493,991	966,826	472,835	51%	98,164	482%

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) is a cost-sharing pool under Statement No. 45 of the Governmental Accounting Standards Board (GASB 45). Consequently, each employer reports the contractually required contribution. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 was calculated as a part of this valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
	Tier 1 / Tier 2	OPSRP	
		General Service	Police & Fire
July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern employer financial reporting for retiree healthcare obligations for fiscal years beginning after June 15, 2017. In general, the changes required by GASB 75 parallel those that occurred for pension reporting when GASB 68 replaced GASB 27. Accounting information for reporting under GASB 75 will be provided separately and is not included in this report.

Executive Summary

Principal Valuation Results

A summary of principal valuation results from the current valuation and the prior valuation follows. Any changes in actuarial assumptions, methods or plan provisions between the two valuations are described later in this report. More detailed information can be found in the system-wide actuarial valuation report.

City of Culver

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
T1/T2 UAL	\$472,835	\$220,887
Allocated pooled OPSRP UAL	13,955	13,509
Side account	0	0
Net unfunded pension actuarial accrued liability	486,790	234,396
Combined valuation payroll	98,164	118,163
Net pension UAL as a percentage of payroll	496%	198%
Calculated side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	\$477	\$939

In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer’s combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.

Executive Summary

Principal Valuation Results (continued)

Tier 1/Tier 2

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
Normal cost	\$12,770	\$18,764
Tier 1/Tier 2 valuation payroll	98,164	118,163
Tier 1/Tier 2 pension normal cost rate	13.01%	15.88%
Tier 1/ Tier 2 Actuarial accrued liability	\$966,826	\$839,407
Actuarial asset value	493,991	618,520
Tier 1/Tier 2 Unfunded actuarial accrued liability	472,835	220,887
Tier 1/ Tier 2 Funded status	51%	74%
Combined valuation payroll	\$98,164	\$118,163
Tier 1/Tier 2 UAL as a percentage of payroll	482%	187%
Tier 1/Tier 2 UAL rate (includes Multnomah Fire District #10)	6.00%	0.13%
Tier 1/Tier 2 active members ¹	2	2
Tier 1/Tier 2 dormant members	1	3
Tier 1/Tier 2 retirees and beneficiaries	8	6

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
General service normal cost	\$342.2	\$301.3
OPSRP general service valuation payroll	4,266.9	3,720.4
General service normal cost rate	8.02%	8.10%
Police and fire normal cost	\$69.9	\$59.6
OPSRP police and fire valuation payroll	546.4	462.3
Police and fire normal cost rate	12.79%	12.90%
Actuarial accrued liability	\$3,742.5	\$3,064.1
Actuarial asset value	2,389.1	2,024.6
Unfunded actuarial accrued liability	1,353.5	1,039.5
Funded status	64%	66%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	14%	11%
UAL rate	1.27%	1.01%

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
RHIA		
Normal cost	\$3.3	\$3.5
Tier 1 / Tier 2 valuation payroll	4,730.8	4,933.1
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	\$465.6	\$468.4
Actuarial asset value	419.3	395.9
Unfunded actuarial accrued liability	46.3	72.5
Funded status	90%	85%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	0%	1%
UAL rate	0.43%	0.43%

Side Account Information

Reconciliation of Side Accounts

The following table reconciles the total side account from the beginning of the year to the end of the year. Side account transfers were calculated by PERS and made on a monthly basis. The amount of these transfers is shown in the table below.

All information in this table has been provided by PERS.

	New	Continuing	Total
1. Side account as of December 31, 2014	N/A		
2. Deposits made during 2015		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2015			
5. Side account earnings during 2015			
6. Side account as of December 31, 2015 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2015	December 31, 2014
Side account 1	\$0	\$0
Side account 2	0	0
Side account 3	0	0
Total	\$0	\$0

Development of Side Account Rate

The rate relief attributable to an employer's side account is determined by amortizing the side account balance on the valuation date over a fixed period, and expressing the result as a percentage of combined valuation payroll. For side accounts established prior to December 31, 2009, the fixed period ends December 31, 2027. For side accounts established at a later date, the fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2015	December 31, 2014
1. Total side account	\$0	\$0
2. Combined valuation payroll	98,164	118,163
3. Average Amortization factor	9.504	10.118
4. Total side account rate (-1. ÷ 2. ÷ 3.)¹	0.00%	0.00%

¹ For employers with more than one side account, the Total Side Account Rate is determined by calculating the rate on each side account separately and adding the rates together.

Tier 1/Tier 2 Valuation Results

Assets

A summary of the market value of pension assets, and reconciliation from the prior year are shown below.

Summary of Market Value of Tier 1/Tier 2 Pension Assets

	December 31, 2015	December 31, 2014
1. Member reserves	\$8,279	\$113,033
2. Employer reserves	97,701	271,282
3. Benefits in force reserve	388,011	234,204
4. Total market value of assets (1. + 2. + 3.)	\$493,991	\$618,520

The market value of member and employer reserves is provided by PERS. The benefits in force reserve provided by PERS is allocated each year among employers in proportion to their liabilities for retired members and beneficiaries.

Reconciliation of Tier 1/Tier 2 Pension Assets

	December 31, 2014 to December 31, 2015
1. Market value of assets at beginning of year	\$618,520
2. Regular employer contributions	15,036
3. Benefit payments and expense	(70,560)
4. Adjustments ¹	(88,080)
5. Interest credited	19,076
6. Total transferred from side accounts	0
7. Market value of assets at end of year (1. + 2. + 3. + 4. + 5. + 6.)	\$493,991

¹ Note the adjustment item above includes a reallocation of the benefits in force reserve, transfers to Multnomah Fire District #10, and other adjustments made by PERS.

Tier 1/Tier 2 Valuation Results

Liabilities

Normal Cost

The normal cost represents the value of benefits assigned to the next year of service by the actuarial cost method. If all actuarial assumptions are met, the normal cost represents the amount that would need to be contributed each year to fund plan benefits. Amounts shown below include assumed administrative expenses, which are allocated pro-rata based on normal cost.

Summary of Normal Cost by Tier/Member Classification

	December 31, 2015	December 31, 2014
Tier 1 Police & Fire	\$0	\$0
Tier 1 General Service	9,363	18,764
Tier 2 Police & Fire	0	0
Tier 2 General Service	3,407	0
Total	\$12,770	\$18,764

Change in Tier 1/Tier 2 Normal Cost

The following table shows the impact of the assumption, method, and plan changes on normal cost as of December 31, 2015.

	Before Changes	After Changes	Net Change
Normal Cost	\$12,770	\$12,770	\$0

Tier 1/Tier 2 Valuation Results

Liabilities

Actuarial Accrued Liability

The actuarial accrued liability represents the value of benefits allocated to service performed before the valuation date by the actuarial cost method. If all actuarial assumptions are met, the actuarial accrued liability represents the amount of assets that would need to be accumulated as of the valuation date to provide for the portion of benefits allocated to service already performed.

Summary of Actuarial Accrued Liability by Tier/Member Classification

	December 31, 2015	December 31, 2014
Active Members		
▪ Tier 1 Police & Fire	\$0	\$0
▪ Tier 1 General Service	100,453	324,154
▪ Tier 2 Police & Fire	4,547	4,546
▪ Tier 2 General Service	4,177	650
▪ Total Active Members	\$109,177	\$329,350
Dormant Members	19,858	55,707
Retired Members and Beneficiaries	837,791	454,350
Total Actuarial Accrued Liability	\$966,826	\$839,407

Change in Tier 1/Tier 2 Actuarial Accrued Liability

The following table shows the impact of the assumption, method, and plan changes on the actuarial accrued liability as of December 31, 2015.

	Before Changes	After Changes	Net Change
Actuarial Accrued Liability	\$966,826	\$966,826	\$0

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Summary of UAL

The UAL represents the difference between the assets accumulated and the liability attributed to prior years of service by the cost method.

	December 31, 2015	December 31, 2014
1. Actuarial accrued liability	\$966,826	\$839,407
2. Actuarial value of assets	493,991	618,520
3. Unfunded accrued liability (1. – 2.)	472,835	220,887
4. Funded percentage (2. ÷ 1.)	51%	74%
5. Combined valuation payroll	\$98,164	\$118,163
6. Unfunded accrued liability as % of combined valuation payroll (3. ÷ 5.)	482%	187%

Reconciliation of UAL Bases

Beginning with the December 31, 2013 actuarial valuation, each odd-year valuation establishes a 20-year closed-period amortization schedule for outstanding Tier 1/Tier 2 UAL amounts. Amortization schedules are calculated based on the total Tier 1/Tier 2 UAL as of that valuation date less the remaining unamortized balance of previously established Tier 1/Tier 2 UAL bases.

Amortization Base	UAL December 31, 2014	Payment	Interest	UAL December 31, 2015	Next Year's Payment
December 31, 2013	\$88,508	\$6,630	\$6,373	\$88,251	\$6,862
December 31, 2015	N/A	N/A	N/A	\$384,584	\$27,828
Total				\$472,835	\$34,690

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Actuarial Gain or Loss since Prior Valuation

The system-wide actuarial valuation report contains a detailed analysis of gains and losses since the last valuation. The table below shows the gain or loss for the individual employer.

1. Expected actuarial accrued liability	
a. Actuarial accrued liability at December 31, 2014	\$839,407
b. Normal cost at December 31, 2014 (excluding assumed expenses)	17,949
c. Benefit payments during 2015	(70,015)
d. Interest at 7.50% to December 31, 2015	61,003
e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)	848,344
f. Change in actuarial accrued liability due to assumption, method, and plan changes	0
g. Expected actuarial accrued liability at December 31, 2015 (e. + f.)	848,344
2. Actuarial accrued liability at December 31, 2015	966,826
3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)	(118,482)
4. Expected actuarial value of assets	
a. Actuarial value of assets at December 31, 2014	618,520
b. Contributions for 2015 ¹	15,036
c. Benefit payments and expenses during 2015	(70,560)
d. Interest at 7.50% to December 31, 2015	44,307
e. Expected actuarial value of assets at December 31, 2015 (a. + b. + c. + d.)	607,302
5. Actuarial value of assets at December 31, 2015	493,991
6. Gain/(loss) on actuarial value of assets (5. - 4.e.)	(113,311)
7. Total actuarial gain/(loss) (3. + 6.)	(\$231,793)

Unfunded Accrued Liability Reconciliation

A reconciliation of the Tier 1/Tier 2 UAL from December 31, 2014 is provided below.

1. UAL at December 31, 2014	\$220,887
2. Expected increase	20,155
3. Liability (gain)/loss	118,482
4. Asset (gain)/loss	113,311
5. Change due to changes in assumptions, methods, and plan provisions	0
6. UAL at December 31, 2015 (1. + 2. + 3. + 4. + 5.)	\$472,835

¹ Includes rate relief from side accounts.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Normal Cost Rate

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

Development of Tier 1/Tier 2 Normal Cost Rate

	December 31, 2015			December 31, 2014		
	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate
Tier 1 Police & Fire	\$0	\$0	0.00%	\$0	\$0	0.00%
Tier 1 General Service	9,363	62,753	14.92%	18,764	118,163	15.88%
Tier 2 Police & Fire	0	0	0.00%	0	0	0.00%
Tier 2 General Service	3,407	35,411	9.62%	0	0	0.00%
Total	\$12,770	\$98,164	13.01%	\$18,764	\$118,163	15.88%

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Development of Tier 1/Tier 2 UAL Rates

The UAL rate is determined by calculating the next year's scheduled payment to the UAL as a percentage of combined valuation payroll.

	December 31, 2015	December 31, 2014
1. Total Tier 1/Tier 2 UAL	\$472,835	\$220,887
2. Next year's Tier 1/Tier 2 UAL payment	34,690	16,209
3. Combined valuation payroll	98,164	118,163
4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)	35.34%	13.72%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	13.01%	15.88%
b. Tier 1/Tier 2 UAL rate	35.34%	13.72%
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate (a. + b. + c.)	48.50%	29.75%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Adjustments Due to Rate Collar and Minimum Rate Requirements

Employer contribution rates are generally limited to change by no more than the greater of 3 percent of payroll or 20 percent from the current contribution rate. However, if the funded percentage excluding side accounts is below 60 percent or above 140 percent the rate collar doubles in size. If the funded percentage excluding side accounts is between 60 and 70 percent or 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

The table below shows the current contribution rate for the period from July 1, 2015 through June 30, 2017, develops the maximum and minimum contribution rates effective July 1, 2017 based on the collar, and calculates the net adjustment due to the collar and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

1. Current net Tier 1/Tier 2 pension contribution rate		13.01%
2. Employer contribution rate attributable to side accounts		0.00%
3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)		13.01%
4. Size of rate collar		
a. 20% of current employer contribution rate (20% x 3.)		2.60%
b. Preliminary size of rate collar (maximum of 3% or a.)		3.00%
c. Funded percentage		51%
d. Size of rate collar (If c. < 60% or c. > 140%, 2 x b. If c. is 70%-130%, b. Otherwise, a graded rate between b. and 2 x b.)		6.00%
5. July 1, 2017 minimum employer contribution rate	(3. – 4.d. but not < 0%)	7.01%
6. July 1, 2017 maximum employer contribution rate	(3. + 4.d.)	19.01%
7. July 1, 2017 total pension rate, before adjustment		48.50%
8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)		(29.49%)
9. July 1, 2017 Tier 1/Tier 2 UAL rate, before collar		35.34%
10. July 1, 2017 Tier 1/Tier 2 UAL rate, after collar	(8. + 9.)	5.85%
11. July 1, 2017 Tier 1/Tier 2 pension rate, after collar		19.01%
12. Tier 1/Tier 2 retiree healthcare rate		0.50%
13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)		0.00%
14. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment		13.01%
15. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)		13.01%
16. July 1, 2017 Tier 1/Tier 2 pension rate, after minimum adjustment	(11. + 13.)	19.01%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Post-Rate Collar)

The table below summarizes the employer's pension contribution rate for Tier 1 /Tier 2 after adjustments for the rate collar and the 6 percent of payroll minimum employer contribution rate.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	13.01%	15.88%
b. Tier 1/Tier 2 UAL rate	5.85%	(0.02%)
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate <i>(a. + b. + c., minimum of 5.50%)</i>	19.01%	16.01%

Data

Demographic Information

Employer Valuation Payroll

	General Service	Police & Fire	Total
Tier 1	\$62,753	\$0	\$62,753
Tier 2	35,411	0	35,411
Tier 1/Tier 2 valuation payroll	98,164	0	98,164
OPSRP valuation payroll	0	0	0
Combined valuation payroll	\$98,164	\$0	\$98,164

Employer Member Census

	December 31							
	2015				2014			
	Tier 1	Tier 2	OPSRP	Total	Tier 1	Tier 2	OPSRP	Total
Active Members ¹								
General Service	1	1	0	2	2	0	0	2
Police & Fire	0	0	0	0	0	0	0	0
Total	1	1	0	2	2	0	0	2
Active Members with previous service segments with the employer								
General Service	1	1	N/A	2	1	1	N/A	2
Police & Fire	0	1	N/A	1	0	1	N/A	1
Total	1	2	N/A	3	1	2	N/A	3
Dormant Members								
General Service	0	1	1	2	2	1	1	4
Police & Fire	0	0	0	0	0	0	0	0
Total	0	1	1	2	2	1	1	4
Retired Members and Beneficiaries								
General Service	6	0	0	6	4	0	0	4
Police & Fire	1	1	0	2	1	1	0	2
Total	7	1	0	8	5	1	0	6
Grand Total Number of Members	9	5	1	15	10	4	1	15

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Data

Demographic Information (continued)

Employer Tier 1/Tier 2 Active Members as of December 31, 2015

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
<20										
20-24										
25-29										
30-34										
35-39										
40-44										
45-49			1							1
50-54										
55-59					1					1
60-64										
65-69										
70-74										
75+										
Total	0	0	1	0	1	0	0	0	0	2

Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2015

Dormant Members			Retired Members and Beneficiaries		
Age	Count	Average Deferred Monthly Benefit	Age	Count	Average Monthly Benefit
<20			<45		
20-24			45-49		
25-29			50-54		
30-34			55-59		
35-39			60-64	3	558
40-44			65-69	3	760
45-49	1	303	70-74	1	1,237
50-54			75-79	1	226
55-59			80-84		
60-64			85-89		
65-69			90-94		
70-74			95-99		
75+			100+		
Total	1	303	Total	8	677

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2015 valuation can be found in the system-wide actuarial valuation report.

Actuarial Methods and Valuation Procedures

A brief summary of the methods used in this valuation is shown below:

<i>Actuarial cost method</i>	Entry Age Normal.
<i>Amortization Method</i>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. Gains and losses between subsequent odd-year valuations will be amortized as a level percentage of projected combined valuation payroll over a closed 20 year period.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.</p>

Economic Assumptions

A brief summary of the key economic assumptions used in this valuation is shown below:

<i>Net investment return</i>	7.50% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.50% compounded annually on members' regular account balances.</p> <p>7.50% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 6.3% in 2016 to 4.4% in 2094.
<i>Administrative Expenses</i>	<p>\$5.5 million added to OPSRP normal cost.</p> <p>\$33.0 million added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2014 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

There were no changes in actuarial methods and allocation procedures since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA actuarial methods and allocation procedures is provided as part of the system-wide valuation report.

Changes in Assumptions

There were no changes in assumptions since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA assumptions is provided as part of the system-wide valuation report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Glossary

Actuarial Accrued Liability

The portion of the present value of prospective benefits allocated to service and compensation before the valuation date in accordance with the actuarial cost method.

Actuarial Asset Value

The value of assets used in calculating the required contributions. The actuarial asset value may be equal to the fair market value of assets, or it may spread the recognition of certain investment gains or losses over a period of years in accordance with an asset valuation method.

Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disablement and retirement; rates of investment earnings and other relevant items.

Actuarial Cost Method

Sometimes called “funding method,” a particular technique used by actuaries to establish the amount and incidence of the annual actuarial cost of pension plan benefits, or normal cost, and the related unfunded actuarial accrued liability. Ordinarily, the annual contribution to the plan comprises the normal cost and an amount for amortization of the unfunded actuarial accrued liability.

Actuarial Gain or (Loss)

A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions, during the period between two actuarial valuation dates, as determined in accordance with a particular actuarial cost method.

Combined Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for both Tier 1/Tier 2 and OPSRP active members. This payroll is used to calculate UAL rates.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

Employer Contribution Rate

Consists of the normal cost rate and the UAL rates, plus adjustments for other items such as side account rate offsets.

Funded Status

The actuarial value of assets expressed as a percentage of the actuarial accrued liability.

Normal Cost

The annual cost allocated to the current year, under the actuarial cost method in use. The normal cost divided by the applicable payroll is the normal cost rate.

OPSRP Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for OPSRP active members. This payroll is used to calculate OPSRP normal cost rates.

Glossary

Pre-SLGRP Liability

The sum of Pre-SLGRP Pooled Liabilities and Transition Liabilities.

Pre-SLGRP Pooled Liability

The difference between the total UAL and the UAL attributable to the SLGRP for a pool of employers that joined the SLGRP. There are currently two pre-SLGRP pools. One was created for State Agencies and Community Colleges when the SLGRP was formed. The other one was created when the Local Government Rate Pool joined the SLGRP.

Present Value

Sometimes called “actuarial present value,” the estimated cost (as of the valuation date) of a series of future payments. The present value is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Rate Collar

A methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution rate and funded status.

Required Supplementary Information (RSI)

Schedules, statistical data, and other information that are an essential part of financial reporting and should be presented with, but are not part of, the basic financial statements of a governmental entity.

Statement No. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions.

Statement No. 68 of the Governmental Accounting Standards Board (GASB 68)

The accounting standard governing a state or local governmental employer’s accounting for pensions for fiscal years beginning after June 15, 2014.

Statement No. 75 of the Governmental Accounting Standards Board (GASB 75)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

The difference between the total UAL and the UAL attributable to the SLGRP for an individual employer that joined the SLGRP or the Local Government Rate Pool.

Unfunded Accrued Liability (UAL)

The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. The UAL is divided by combined valuation payroll and an amortization factor to determine an initial pre-collar UAL rate. The final UAL rate can be adjusted by the rate collar.



Milliman
111 SW Fifth Avenue, Suite 3700
Portland, OR 97204-3654
503 227 0634

This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

September 2016

Curry County/2002
Oregon Public Employees Retirement System

Dear Sir or Madam:

As part of our engagement with the Oregon Public Employees Retirement Board, we performed a system-wide actuarial valuation of the Oregon Public Employees Retirement System (“PERS” or “the System”) as of December 31, 2015. The attached report, which is an informational supplement to the system-wide report, provides you with employer-specific contribution rates that will become effective July 1, 2017. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information will be provided separately by PERS and is not included in this report.

This report reflects the System's benefit provisions in effect as of December 31, 2015. The full development of the valuation results for the OPSRP and Retiree Health Insurance Account (RHIA) programs can be found in the separate system-wide actuarial valuation report. Costs of the IAP (Individual Account Program) are not included in this or the system-wide actuarial valuation report. Further, costs of pension obligation bond payments are not included in this or the system-wide actuarial valuation report.

If you have any questions about this report, please contact Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, OPSRP general service, and OPSRP police and fire payroll,
- Information to assist you in completing GASB 45 financial reporting requirements, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- Detailed development of Tier 1/Tier 2 valuation results,
- A brief summary of methods and assumptions, and
- A brief summary of any changes in System benefit provisions.

Additional information is provided in the system-wide actuarial valuation report, which is available at www.oregon.gov/PERS/Pages/section/financial_reports/financials.aspx.



September 2016
Curry County/2002

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the System's staff. This information includes, but is not limited to, System benefit provisions as defined by statute, member census data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for the System have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer a reasonable estimate of anticipated experience affecting the System.

A valuation report is only an estimate of the System's financial condition as of a single date. It can neither predict the System's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of System benefits, only the timing of System contributions. While a valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: System experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the System's funded status); and changes in System benefit provisions or applicable law. Due to the limited scope of this assignment, we did not perform an analysis of the potential range of future measurements. The Board has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in September 2015.

Some of the actuarial computations presented in this report are for purposes of determining the contribution rates effective from July 2017 to June 2019 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.



September 2016
Curry County/2002

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the System. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

Additional information is provided in the system-wide actuarial valuation report.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Larrabee".

Matt Larrabee, FSA, EA, MAAA
Principal and Consulting Actuary

A handwritten signature in black ink, appearing to read "Scott Preppernau".

Scott Preppernau, FSA, EA, MAAA
Principal and Consulting Actuary



ACTUARIAL VALUATION REPORT DECEMBER 31, 2015

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

INDEPENDENT EMPLOYERS

Curry County -- #2002

September 2016

Secondary Employers

2034 Curry County General Hospital

CONTENTS

Executive Summary **1**

Employer Contribution Rates 1

Accounting Information 3

Principal Valuation Results 5

 ▪ Employer 5

 ▪ Tier 1/Tier 2 6

 ▪ OPSRP 7

 ▪ Retiree Healthcare 7

Side Account Information **8**

Tier 1/Tier 2 Valuation Results **10**

Assets 10

Liabilities 11

Unfunded Accrued Liability (UAL) 13

Contribution Rate Development 15

Data **20**

Brief Summary of Actuarial Methods and Assumptions **22**

Brief Summary of Changes in Plan Provisions **24**

Glossary **25**

Executive Summary

Milliman has prepared this report for Curry County to:

- Provide summary December 31, 2015 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2017 through June 30, 2019,
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2015, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45. GASB 68 information will be provided separately by PERS and is not included in this report.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2015 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Curry County.

Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2017 through June 30, 2019 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

Employer Rates Effective July 1, 2017 for Curry County

	Payroll		
	Tier 1/Tier 2	OPSRP General Service	OPSRP Police & Fire
Pension			
Normal cost rate	18.97%	8.02%	12.79%
Tier 1/Tier 2 UAL rate ¹	1.49%	1.49%	1.49%
OPSRP UAL rate	1.27%	1.27%	1.27%
Side account rate relief	0.00%	0.00%	0.00%
Net pension contribution rate	21.73%	10.78%	15.55%
Retiree Healthcare			
Normal cost rate	0.07%	0.00%	0.00%
UAL rate	0.43%	0.43%	0.43%
Net retiree healthcare rate	0.50%	0.43%	0.43%
Total net employer contribution rate	22.23%	11.21%	15.98%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate.

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 Biennium

The rate collar limits changes in contribution rates, but does not limit changes in rates for individual employers related to side accounts. The table below shows the possible minimum and maximum rates first effective as of July 1, 2019, which will depend on the funded status as of December 31, 2017. If the employer's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2015 is 75%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	20.46%	20.46%
Minimum 2019-2021 Rate	16.37%	12.28%
Maximum 2019-2021 Rate	24.55%	28.64%

Executive Summary

Accounting Information

Milliman is not an accounting or audit firm and cannot provide accounting advice. Milliman is not responsible for the interpretation of, or compliance with, accounting standards; citations to, and descriptions of accounting standards provided in this report are for reference purposes only. The information provided in this section is intended to assist the employer in completing its financial statements, but any accounting determination should be reviewed by your auditor.

Pension

In June 2012 the GASB issued Statement No. 68, which replaced GASB 27 and governs employer financial reporting for fiscal years beginning after June 15, 2014. The new standard replaced many of the key elements of the prior reporting requirements. Under the new rules, employers are required to record a balance sheet liability for their unfunded pension obligations. In addition, the timing and coordination of plan and employer reporting has changed under the new requirements. GASB 68 information for employers will be provided separately by PERS and is not included in this report.

Schedule of Funding Progress

Under GASB 27, the Schedule of Funding Progress for Tier 1/Tier 2 pension liabilities was reported in the Required Supplementary Information. This schedule is no longer required now that GASB 68 has replaced GASB 27. However, for additional information and the sake of historical comparison, the updated schedule is shown below for the last several valuations. For employers with side accounts, the actuarial value of assets in this Schedule includes the value of the employer's side accounts.

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (b - a)	Funded Ratio (a ÷ b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a) ÷ c)
12/31/2010	\$44,773,178	\$52,653,513	\$7,880,335	85%	\$8,242,417	96%
12/31/2011	43,857,781	53,518,685	9,660,904	82%	6,452,202	150%
12/31/2012	47,011,256	51,970,582	4,959,326	90%	5,808,820	85%
12/31/2013	50,448,321	53,837,333	3,389,012	94%	4,485,910	76%
12/31/2014	50,398,447	61,802,543	11,404,096	82%	4,297,190	265%
12/31/2015	47,469,556	63,349,580	15,880,024	75%	4,665,540	340%

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) is a cost-sharing pool under Statement No. 45 of the Governmental Accounting Standards Board (GASB 45). Consequently, each employer reports the contractually required contribution. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 was calculated as a part of this valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
	Tier 1 / Tier 2	OPSRP	
		General Service	Police & Fire
July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern employer financial reporting for retiree healthcare obligations for fiscal years beginning after June 15, 2017. In general, the changes required by GASB 75 parallel those that occurred for pension reporting when GASB 68 replaced GASB 27. Accounting information for reporting under GASB 75 will be provided separately and is not included in this report.

Executive Summary

Principal Valuation Results

A summary of principal valuation results from the current valuation and the prior valuation follows. Any changes in actuarial assumptions, methods or plan provisions between the two valuations are described later in this report. More detailed information can be found in the system-wide actuarial valuation report.

Curry County

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
T1/T2 UAL	\$15,880,024	\$11,404,096
Allocated pooled OPSRP UAL	663,272	491,262
Side account	0	0
Net unfunded pension actuarial accrued liability	16,543,296	11,895,358
Combined valuation payroll	4,665,540	4,297,190
Net pension UAL as a percentage of payroll	355%	277%
Calculated side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	\$22,654	\$34,157

In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer’s combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.

Executive Summary

Principal Valuation Results (continued)

Tier 1/Tier 2

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
Normal cost	\$391,416	\$434,196
Tier 1/Tier 2 valuation payroll	2,063,882	2,177,338
Tier 1/Tier 2 pension normal cost rate	18.97%	19.94%
Tier 1/ Tier 2 Actuarial accrued liability	\$63,349,580	\$61,802,543
Actuarial asset value	47,469,556	50,398,447
Tier 1/Tier 2 Unfunded actuarial accrued liability	15,880,024	11,404,096
Tier 1/ Tier 2 Funded status	75%	82%
Combined valuation payroll	\$4,665,540	\$4,297,190
Tier 1/Tier 2 UAL as a percentage of payroll	340%	265%
Tier 1/Tier 2 UAL rate	1.49%	0.52%
(includes Multnomah Fire District #10)		
Tier 1/Tier 2 active members ¹	38	42
Tier 1/Tier 2 dormant members	81	86
Tier 1/Tier 2 retirees and beneficiaries	296	285

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
General service normal cost	\$342.2	\$301.3
OPSRP general service valuation payroll	4,266.9	3,720.4
General service normal cost rate	8.02%	8.10%
Police and fire normal cost	\$69.9	\$59.6
OPSRP police and fire valuation payroll	546.4	462.3
Police and fire normal cost rate	12.79%	12.90%
Actuarial accrued liability	\$3,742.5	\$3,064.1
Actuarial asset value	2,389.1	2,024.6
Unfunded actuarial accrued liability	1,353.5	1,039.5
Funded status	64%	66%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	14%	11%
UAL rate	1.27%	1.01%

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
RHIA		
Normal cost	\$3.3	\$3.5
Tier 1 / Tier 2 valuation payroll	4,730.8	4,933.1
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	\$465.6	\$468.4
Actuarial asset value	419.3	395.9
Unfunded actuarial accrued liability	46.3	72.5
Funded status	90%	85%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	0%	1%
UAL rate	0.43%	0.43%

Side Account Information

Reconciliation of Side Accounts

The following table reconciles the total side account from the beginning of the year to the end of the year. Side account transfers were calculated by PERS and made on a monthly basis. The amount of these transfers is shown in the table below.

All information in this table has been provided by PERS.

	New	Continuing	Total
1. Side account as of December 31, 2014	N/A		
2. Deposits made during 2015		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2015			
5. Side account earnings during 2015			
6. Side account as of December 31, 2015 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2015	December 31, 2014
Side account 1	\$0	\$0
Side account 2	0	0
Side account 3	0	0
Total	\$0	\$0

Development of Side Account Rate

The rate relief attributable to an employer's side account is determined by amortizing the side account balance on the valuation date over a fixed period, and expressing the result as a percentage of combined valuation payroll. For side accounts established prior to December 31, 2009, the fixed period ends December 31, 2027. For side accounts established at a later date, the fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2015	December 31, 2014
1. Total side account	\$0	\$0
2. Combined valuation payroll	4,665,540	4,297,190
3. Average Amortization factor	9.504	10.118
4. Total side account rate (-1. ÷ 2. ÷ 3.)¹	0.00%	0.00%

¹ For employers with more than one side account, the Total Side Account Rate is determined by calculating the rate on each side account separately and adding the rates together.

Tier 1/Tier 2 Valuation Results

Assets

A summary of the market value of pension assets, and reconciliation from the prior year are shown below.

Summary of Market Value of Tier 1/Tier 2 Pension Assets

	December 31, 2015	December 31, 2014
1. Member reserves	\$6,423,946	\$7,450,024
2. Employer reserves	21,049,080	22,522,715
3. Benefits in force reserve	19,996,530	20,425,708
4. Total market value of assets (1. + 2. + 3.)	\$47,469,556	\$50,398,447

The market value of member and employer reserves is provided by PERS. The benefits in force reserve provided by PERS is allocated each year among employers in proportion to their liabilities for retired members and beneficiaries.

Reconciliation of Tier 1/Tier 2 Pension Assets

	December 31, 2014 to December 31, 2015
1. Market value of assets at beginning of year	\$50,398,447
2. Regular employer contributions	421,929
3. Benefit payments and expense	(3,636,394)
4. Adjustments ¹	(902,774)
5. Interest credited	1,188,348
6. Total transferred from side accounts	0
7. Market value of assets at end of year (1. + 2. + 3. + 4. + 5. + 6.)	\$47,469,556

¹ Note the adjustment item above includes a reallocation of the benefits in force reserve, transfers to Multnomah Fire District #10, and other adjustments made by PERS.

Tier 1/Tier 2 Valuation Results

Liabilities

Normal Cost

The normal cost represents the value of benefits assigned to the next year of service by the actuarial cost method. If all actuarial assumptions are met, the normal cost represents the amount that would need to be contributed each year to fund plan benefits. Amounts shown below include assumed administrative expenses, which are allocated pro-rata based on normal cost.

Summary of Normal Cost by Tier/Member Classification

	December 31, 2015	December 31, 2014
Tier 1 Police & Fire	\$126,039	\$106,698
Tier 1 General Service	122,646	170,249
Tier 2 Police & Fire	63,182	80,981
Tier 2 General Service	79,549	76,268
Total	\$391,416	\$434,196

Change in Tier 1/Tier 2 Normal Cost

The following table shows the impact of the assumption, method, and plan changes on normal cost as of December 31, 2015.

	Before Changes	After Changes	Net Change
Normal Cost	\$391,416	\$391,416	\$0

Tier 1/Tier 2 Valuation Results

Liabilities

Actuarial Accrued Liability

The actuarial accrued liability represents the value of benefits allocated to service performed before the valuation date by the actuarial cost method. If all actuarial assumptions are met, the actuarial accrued liability represents the amount of assets that would need to be accumulated as of the valuation date to provide for the portion of benefits allocated to service already performed.

Summary of Actuarial Accrued Liability by Tier/Member Classification

	December 31, 2015	December 31, 2014
Active Members		
▪ Tier 1 Police & Fire	\$3,348,005	\$3,598,966
▪ Tier 1 General Service	6,135,026	7,737,992
▪ Tier 2 Police & Fire	1,880,821	2,005,435
▪ Tier 2 General Service	2,179,724	2,074,591
▪ Total Active Members	\$13,543,576	\$15,416,984
Dormant Members	6,629,667	6,760,191
Retired Members and Beneficiaries	43,176,337	39,625,368
Total Actuarial Accrued Liability	\$63,349,580	\$61,802,543

Change in Tier 1/Tier 2 Actuarial Accrued Liability

The following table shows the impact of the assumption, method, and plan changes on the actuarial accrued liability as of December 31, 2015.

	Before Changes	After Changes	Net Change
Actuarial Accrued Liability	\$63,349,580	\$63,349,580	\$0

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Summary of UAL

The UAL represents the difference between the assets accumulated and the liability attributed to prior years of service by the cost method.

	December 31, 2015	December 31, 2014
1. Actuarial accrued liability	\$63,349,580	\$61,802,543
2. Actuarial value of assets	47,469,556	50,398,447
3. Unfunded accrued liability (1. – 2.)	15,880,024	11,404,096
4. Funded percentage (2. ÷ 1.)	75%	82%
5. Combined valuation payroll	\$4,665,540	\$4,297,190
6. Unfunded accrued liability as % of combined valuation payroll (3. ÷ 5.)	340%	265%

Reconciliation of UAL Bases

Beginning with the December 31, 2013 actuarial valuation, each odd-year valuation establishes a 20-year closed-period amortization schedule for outstanding Tier 1/Tier 2 UAL amounts. Amortization schedules are calculated based on the total Tier 1/Tier 2 UAL as of that valuation date less the remaining unamortized balance of previously established Tier 1/Tier 2 UAL bases.

Amortization Base	UAL December 31, 2014	Payment	Interest	UAL December 31, 2015	Next Year's Payment
December 31, 2013	\$3,396,243	\$254,400	\$244,555	\$3,386,398	\$263,308
December 31, 2015	N/A	N/A	N/A	\$12,493,626	\$904,025
Total				\$15,880,024	\$1,167,333

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Actuarial Gain or Loss since Prior Valuation

The system-wide actuarial valuation report contains a detailed analysis of gains and losses since the last valuation. The table below shows the gain or loss for the individual employer.

1. Expected actuarial accrued liability	
a. Actuarial accrued liability at December 31, 2014	\$61,802,543
b. Normal cost at December 31, 2014 (excluding assumed expenses)	415,349
c. Benefit payments during 2015	(3,608,307)
d. Interest at 7.50% to December 31, 2015	4,515,455
e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)	63,125,040
f. Change in actuarial accrued liability due to assumption, method, and plan changes	0
g. Expected actuarial accrued liability at December 31, 2015 (e. + f.)	63,125,040
2. Actuarial accrued liability at December 31, 2015	63,349,580
3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)	(224,540)
4. Expected actuarial value of assets	
a. Actuarial value of assets at December 31, 2014	50,398,447
b. Contributions for 2015 ¹	421,929
c. Benefit payments and expenses during 2015	(3,636,394)
d. Interest at 7.50% to December 31, 2015	3,659,341
e. Expected actuarial value of assets at December 31, 2015 (a. + b. + c. + d.)	50,843,323
5. Actuarial value of assets at December 31, 2015	47,469,556
6. Gain/(loss) on actuarial value of assets (5. - 4.e.)	(3,373,767)
7. Total actuarial gain/(loss) (3. + 6.)	(\$3,598,307)

Unfunded Accrued Liability Reconciliation

A reconciliation of the Tier 1/Tier 2 UAL from December 31, 2014 is provided below.

1. UAL at December 31, 2014	\$11,404,096
2. Expected increase	877,621
3. Liability (gain)/loss	224,540
4. Asset (gain)/loss	3,373,767
5. Change due to changes in assumptions, methods, and plan provisions	0
6. UAL at December 31, 2015 (1. + 2. + 3. + 4. + 5.)	\$15,880,024

¹ Includes rate relief from side accounts.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Normal Cost Rate

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

Development of Tier 1/Tier 2 Normal Cost Rate

	December 31, 2015			December 31, 2014		
	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate
Tier 1 Police & Fire	\$126,039	\$547,496	23.02%	\$106,698	\$419,603	25.43%
Tier 1 General Service	122,646	561,321	21.85%	170,249	773,775	22.00%
Tier 2 Police & Fire	63,182	325,289	19.42%	80,981	401,054	20.19%
Tier 2 General Service	79,549	629,776	12.63%	76,268	582,906	13.08%
Total	\$391,416	\$2,063,882	18.97%	\$434,196	\$2,177,338	19.94%

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Development of Tier 1/Tier 2 UAL Rates

The UAL rate is determined by calculating the next year's scheduled payment to the UAL as a percentage of combined valuation payroll.

	December 31, 2015	December 31, 2014
1. Total Tier 1/Tier 2 UAL	\$15,880,024	\$11,404,096
2. Next year's Tier 1/Tier 2 UAL payment	1,167,333	833,839
3. Combined valuation payroll	4,665,540	4,297,190
4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)	25.02%	19.40%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	18.97%	19.94%
b. Tier 1/Tier 2 UAL rate	25.02%	19.40%
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate (a. + b. + c.)	44.14%	39.49%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Adjustments Due to Rate Collar and Minimum Rate Requirements

Employer contribution rates are generally limited to change by no more than the greater of 3 percent of payroll or 20 percent from the current contribution rate. However, if the funded percentage excluding side accounts is below 60 percent or above 140 percent the rate collar doubles in size. If the funded percentage excluding side accounts is between 60 and 70 percent or 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

The table below shows the current contribution rate for the period from July 1, 2015 through June 30, 2017, develops the maximum and minimum contribution rates effective July 1, 2017 based on the collar, and calculates the net adjustment due to the collar and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

1. Current net Tier 1/Tier 2 pension contribution rate		17.05%
2. Employer contribution rate attributable to side accounts		0.00%
3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)		17.05%
4. Size of rate collar		
a. 20% of current employer contribution rate (20% x 3.)		3.41%
b. Preliminary size of rate collar (maximum of 3% or a.)		3.41%
c. Funded percentage		75%
d. Size of rate collar (If c. < 60% or c. > 140%, 2 x b. If c. is 70%-130%, b. Otherwise, a graded rate between b. and 2 x b.)		3.41%
5. July 1, 2017 minimum employer contribution rate	(3. – 4.d. but not < 0%)	13.64%
6. July 1, 2017 maximum employer contribution rate	(3. + 4.d.)	20.46%
7. July 1, 2017 total pension rate, before adjustment		44.14%
8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)		(23.68%)
9. July 1, 2017 Tier 1/Tier 2 UAL rate, before collar		25.02%
10. July 1, 2017 Tier 1/Tier 2 UAL rate, after collar	(8. + 9.)	1.34%
11. July 1, 2017 Tier 1/Tier 2 pension rate, after collar		20.46%
12. Tier 1/Tier 2 retiree healthcare rate		0.50%
13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)		0.00%
14. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment		18.97%
15. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)		18.97%
16. July 1, 2017 Tier 1/Tier 2 pension rate, after minimum adjustment	(11. + 13.)	20.46%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Post-Rate Collar)

The table below summarizes the employer's pension contribution rate for Tier 1 /Tier 2 after adjustments for the rate collar and the 6 percent of payroll minimum employer contribution rate.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	18.97%	19.94%
b. Tier 1/Tier 2 UAL rate	1.34%	0.37%
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate <i>(a. + b. + c., minimum of 5.50%)</i>	20.46%	20.46%

Data

Demographic Information

Employer Valuation Payroll

	General Service	Police & Fire	Total
Tier 1	\$561,321	\$547,496	\$1,108,817
Tier 2	629,776	325,289	955,065
Tier 1/Tier 2 valuation payroll	1,191,097	872,785	2,063,882
OPSRP valuation payroll	1,669,389	932,269	2,601,658
Combined valuation payroll	\$2,860,486	\$1,805,054	\$4,665,540

Employer Member Census

	December 31							
	2015				2014			
	Tier 1	Tier 2	OPSRP	Total	Tier 1	Tier 2	OPSRP	Total
Active Members ¹								
General Service	11	13	37	61	14	13	30	57
Police & Fire	8	6	19	33	7	8	18	33
Total	19	19	56	94	21	21	48	90
Active Members with previous service segments with the employer								
General Service	24	11	N/A	35	30	14	N/A	44
Police & Fire	6	10	N/A	16	7	11	N/A	18
Total	30	21	N/A	51	37	25	N/A	62
Dormant Members								
General Service	28	45	22	95	31	47	26	104
Police & Fire	4	4	5	13	5	3	6	14
Total	32	49	27	108	36	50	32	118
Retired Members and Beneficiaries								
General Service	209	26	9	244	208	20	5	233
Police & Fire	56	5	0	61	53	4	0	57
Total	265	31	9	305	261	24	5	290
Grand Total Number of Members	346	120	92	558	355	120	85	560

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Data

Demographic Information (continued)

Employer Tier 1/Tier 2 Active Members as of December 31, 2015

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
<20										
20-24										
25-29										
30-34										
35-39										
40-44		1	1	3						5
45-49			1	1	3	1				6
50-54		1	2	3	1	3				10
55-59			2	1	2	2	2			9
60-64			2	2		2				6
65-69			2							2
70-74										
75+										
Total	0	2	10	10	6	8	2	0	0	38

Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2015

Dormant Members			Retired Members and Beneficiaries		
Age	Count	Average Deferred Monthly Benefit	Age	Count	Average Monthly Benefit
<20			<45		
20-24			45-49	3	460
25-29			50-54	7	716
30-34			55-59	15	783
35-39	1	64	60-64	43	1,758
40-44	4	339	65-69	74	1,076
45-49	11	1,142	70-74	48	825
50-54	8	637	75-79	57	936
55-59	18	1,010	80-84	23	539
60-64	18	408	85-89	15	281
65-69	14	798	90-94	8	608
70-74	4	399	95-99	3	83
75+	3	1,039	100+		
Total	81	747	Total	296	973

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2015 valuation can be found in the system-wide actuarial valuation report.

Actuarial Methods and Valuation Procedures

A brief summary of the methods used in this valuation is shown below:

<i>Actuarial cost method</i>	Entry Age Normal.
<i>Amortization Method</i>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. Gains and losses between subsequent odd-year valuations will be amortized as a level percentage of projected combined valuation payroll over a closed 20 year period.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.</p>

Economic Assumptions

A brief summary of the key economic assumptions used in this valuation is shown below:

<i>Net investment return</i>	7.50% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.50% compounded annually on members' regular account balances.</p> <p>7.50% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 6.3% in 2016 to 4.4% in 2094.
<i>Administrative Expenses</i>	<p>\$5.5 million added to OPSRP normal cost.</p> <p>\$33.0 million added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2014 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

There were no changes in actuarial methods and allocation procedures since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA actuarial methods and allocation procedures is provided as part of the system-wide valuation report.

Changes in Assumptions

There were no changes in assumptions since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA assumptions is provided as part of the system-wide valuation report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Glossary

Actuarial Accrued Liability

The portion of the present value of prospective benefits allocated to service and compensation before the valuation date in accordance with the actuarial cost method.

Actuarial Asset Value

The value of assets used in calculating the required contributions. The actuarial asset value may be equal to the fair market value of assets, or it may spread the recognition of certain investment gains or losses over a period of years in accordance with an asset valuation method.

Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disablement and retirement; rates of investment earnings and other relevant items.

Actuarial Cost Method

Sometimes called “funding method,” a particular technique used by actuaries to establish the amount and incidence of the annual actuarial cost of pension plan benefits, or normal cost, and the related unfunded actuarial accrued liability. Ordinarily, the annual contribution to the plan comprises the normal cost and an amount for amortization of the unfunded actuarial accrued liability.

Actuarial Gain or (Loss)

A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions, during the period between two actuarial valuation dates, as determined in accordance with a particular actuarial cost method.

Combined Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for both Tier 1/Tier 2 and OPSRP active members. This payroll is used to calculate UAL rates.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

Employer Contribution Rate

Consists of the normal cost rate and the UAL rates, plus adjustments for other items such as side account rate offsets.

Funded Status

The actuarial value of assets expressed as a percentage of the actuarial accrued liability.

Normal Cost

The annual cost allocated to the current year, under the actuarial cost method in use. The normal cost divided by the applicable payroll is the normal cost rate.

OPSRP Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for OPSRP active members. This payroll is used to calculate OPSRP normal cost rates.

Glossary

Pre-SLGRP Liability

The sum of Pre-SLGRP Pooled Liabilities and Transition Liabilities.

Pre-SLGRP Pooled Liability

The difference between the total UAL and the UAL attributable to the SLGRP for a pool of employers that joined the SLGRP. There are currently two pre-SLGRP pools. One was created for State Agencies and Community Colleges when the SLGRP was formed. The other one was created when the Local Government Rate Pool joined the SLGRP.

Present Value

Sometimes called “actuarial present value,” the estimated cost (as of the valuation date) of a series of future payments. The present value is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Rate Collar

A methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution rate and funded status.

Required Supplementary Information (RSI)

Schedules, statistical data, and other information that are an essential part of financial reporting and should be presented with, but are not part of, the basic financial statements of a governmental entity.

Statement No. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions.

Statement No. 68 of the Governmental Accounting Standards Board (GASB 68)

The accounting standard governing a state or local governmental employer’s accounting for pensions for fiscal years beginning after June 15, 2014.

Statement No. 75 of the Governmental Accounting Standards Board (GASB 75)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

The difference between the total UAL and the UAL attributable to the SLGRP for an individual employer that joined the SLGRP or the Local Government Rate Pool.

Unfunded Accrued Liability (UAL)

The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. The UAL is divided by combined valuation payroll and an amortization factor to determine an initial pre-collar UAL rate. The final UAL rate can be adjusted by the rate collar.



Milliman
111 SW Fifth Avenue, Suite 3700
Portland, OR 97204-3654
503 227 0634

This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

September 2016

Deschutes Public Library District/2828
Oregon Public Employees Retirement System

Dear Sir or Madam:

As part of our engagement with the Oregon Public Employees Retirement Board, we performed a system-wide actuarial valuation of the Oregon Public Employees Retirement System (“PERS” or “the System”) as of December 31, 2015. The attached report, which is an informational supplement to the system-wide report, provides you with employer-specific contribution rates that will become effective July 1, 2017. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information will be provided separately by PERS and is not included in this report.

This report reflects the System's benefit provisions in effect as of December 31, 2015. The full development of the valuation results for the OPSRP and Retiree Health Insurance Account (RHIA) programs can be found in the separate system-wide actuarial valuation report. Costs of the IAP (Individual Account Program) are not included in this or the system-wide actuarial valuation report. Further, costs of pension obligation bond payments are not included in this or the system-wide actuarial valuation report.

If you have any questions about this report, please contact Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, OPSRP general service, and OPSRP police and fire payroll,
- Information to assist you in completing GASB 45 financial reporting requirements, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- Detailed development of Tier 1/Tier 2 valuation results,
- A brief summary of methods and assumptions, and
- A brief summary of any changes in System benefit provisions.

Additional information is provided in the system-wide actuarial valuation report, which is available at www.oregon.gov/PERS/Pages/section/financial_reports/financials.aspx.



September 2016
Deschutes Public Library District/2828

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the System's staff. This information includes, but is not limited to, System benefit provisions as defined by statute, member census data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for the System have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer a reasonable estimate of anticipated experience affecting the System.

A valuation report is only an estimate of the System's financial condition as of a single date. It can neither predict the System's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of System benefits, only the timing of System contributions. While a valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: System experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the System's funded status); and changes in System benefit provisions or applicable law. Due to the limited scope of this assignment, we did not perform an analysis of the potential range of future measurements. The Board has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in September 2015.

Some of the actuarial computations presented in this report are for purposes of determining the contribution rates effective from July 2017 to June 2019 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.



September 2016
Deschutes Public Library District/2828

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the System. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

Additional information is provided in the system-wide actuarial valuation report.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Larrabee".

Matt Larrabee, FSA, EA, MAAA
Principal and Consulting Actuary

A handwritten signature in black ink, appearing to read "Scott Preppernau".

Scott Preppernau, FSA, EA, MAAA
Principal and Consulting Actuary



ACTUARIAL VALUATION REPORT DECEMBER 31, 2015

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

INDEPENDENT EMPLOYERS

Deschutes Public Library District -- #2828

September 2016

CONTENTS

Executive Summary **1**

Employer Contribution Rates 1

Accounting Information 3

Principal Valuation Results 5

 ▪ Employer 5

 ▪ Tier 1/Tier 2 6

 ▪ OPSRP 7

 ▪ Retiree Healthcare 7

Side Account Information **8**

Tier 1/Tier 2 Valuation Results **10**

Assets 10

Liabilities 11

Unfunded Accrued Liability (UAL) 13

Contribution Rate Development 15

Data **20**

Brief Summary of Actuarial Methods and Assumptions **22**

Brief Summary of Changes in Plan Provisions **24**

Glossary **25**

Executive Summary

Milliman has prepared this report for Deschutes Public Library District to:

- Provide summary December 31, 2015 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2017 through June 30, 2019,
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2015, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45. GASB 68 information will be provided separately by PERS and is not included in this report.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2015 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Deschutes Public Library District.

Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2017 through June 30, 2019 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

Employer Rates Effective July 1, 2017 for Deschutes Public Library District

	Payroll		
	Tier 1/Tier 2	OPSRP General Service	OPSRP Police & Fire
Pension			
Normal cost rate	13.42%	8.02%	12.79%
Tier 1/Tier 2 UAL rate ¹	1.46%	1.46%	1.46%
OPSRP UAL rate	1.27%	1.27%	1.27%
Side account rate relief	0.00%	0.00%	0.00%
Net pension contribution rate	16.15%	10.75%	15.52%
Retiree Healthcare			
Normal cost rate	0.07%	0.00%	0.00%
UAL rate	0.43%	0.43%	0.43%
Net retiree healthcare rate	0.50%	0.43%	0.43%
Total net employer contribution rate	16.65%	11.18%	15.95%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate.

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 Biennium

The rate collar limits changes in contribution rates, but does not limit changes in rates for individual employers related to side accounts. The table below shows the possible minimum and maximum rates first effective as of July 1, 2019, which will depend on the funded status as of December 31, 2017. If the employer's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2015 is 72%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	14.88%	14.88%
Minimum 2019-2021 Rate	11.88%	8.88%
Maximum 2019-2021 Rate	17.88%	20.88%

Executive Summary

Accounting Information

Milliman is not an accounting or audit firm and cannot provide accounting advice. Milliman is not responsible for the interpretation of, or compliance with, accounting standards; citations to, and descriptions of accounting standards provided in this report are for reference purposes only. The information provided in this section is intended to assist the employer in completing its financial statements, but any accounting determination should be reviewed by your auditor.

Pension

In June 2012 the GASB issued Statement No. 68, which replaced GASB 27 and governs employer financial reporting for fiscal years beginning after June 15, 2014. The new standard replaced many of the key elements of the prior reporting requirements. Under the new rules, employers are required to record a balance sheet liability for their unfunded pension obligations. In addition, the timing and coordination of plan and employer reporting has changed under the new requirements. GASB 68 information for employers will be provided separately by PERS and is not included in this report.

Schedule of Funding Progress

Under GASB 27, the Schedule of Funding Progress for Tier 1/Tier 2 pension liabilities was reported in the Required Supplementary Information. This schedule is no longer required now that GASB 68 has replaced GASB 27. However, for additional information and the sake of historical comparison, the updated schedule is shown below for the last several valuations. For employers with side accounts, the actuarial value of assets in this Schedule includes the value of the employer's side accounts.

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (b - a)	Funded Ratio (a ÷ b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a) ÷ c)
12/31/2010	\$4,331,306	\$4,802,931	\$471,625	90%	\$3,845,887	12%
12/31/2011	4,460,613	5,277,704	817,091	85%	3,653,084	22%
12/31/2012	5,162,441	6,430,787	1,268,346	80%	3,859,982	33%
12/31/2013	6,052,870	6,757,931	705,061	90%	3,987,553	18%
12/31/2014	6,469,449	8,193,622	1,724,173	79%	3,992,085	43%
12/31/2015	6,485,989	8,982,090	2,496,101	72%	4,230,537	59%

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) is a cost-sharing pool under Statement No. 45 of the Governmental Accounting Standards Board (GASB 45). Consequently, each employer reports the contractually required contribution. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 was calculated as a part of this valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
	Tier 1 / Tier 2	OPSRP	
		General Service	Police & Fire
July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern employer financial reporting for retiree healthcare obligations for fiscal years beginning after June 15, 2017. In general, the changes required by GASB 75 parallel those that occurred for pension reporting when GASB 68 replaced GASB 27. Accounting information for reporting under GASB 75 will be provided separately and is not included in this report.

Executive Summary

Principal Valuation Results

A summary of principal valuation results from the current valuation and the prior valuation follows. Any changes in actuarial assumptions, methods or plan provisions between the two valuations are described later in this report. More detailed information can be found in the system-wide actuarial valuation report.

Deschutes Public Library District

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
T1/T2 UAL	\$2,496,101	\$1,724,173
Allocated pooled OPSRP UAL	601,430	456,382
Side account	0	0
Net unfunded pension actuarial accrued liability	3,097,531	2,180,555
Combined valuation payroll	4,230,537	3,992,085
Net pension UAL as a percentage of payroll	73%	55%
Calculated side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	\$20,542	\$31,731

In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer’s combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.

Executive Summary

Principal Valuation Results (continued)

Tier 1/Tier 2

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
Normal cost	\$290,534	\$302,569
Tier 1/Tier 2 valuation payroll	2,164,767	2,276,255
Tier 1/Tier 2 pension normal cost rate	13.42%	13.29%
Tier 1/ Tier 2 Actuarial accrued liability	\$8,982,090	\$8,193,622
Actuarial asset value	6,485,989	6,469,449
Tier 1/Tier 2 Unfunded actuarial accrued liability	2,496,101	1,724,173
Tier 1/ Tier 2 Funded status	72%	79%
Combined valuation payroll	\$4,230,537	\$3,992,085
Tier 1/Tier 2 UAL as a percentage of payroll	59%	43%
Tier 1/Tier 2 UAL rate (includes Multnomah Fire District #10)	1.46%	1.59%
Tier 1/Tier 2 active members ¹	38	44
Tier 1/Tier 2 dormant members	17	19
Tier 1/Tier 2 retirees and beneficiaries	28	22

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
General service normal cost	\$342.2	\$301.3
OPSRP general service valuation payroll	4,266.9	3,720.4
General service normal cost rate	8.02%	8.10%
Police and fire normal cost	\$69.9	\$59.6
OPSRP police and fire valuation payroll	546.4	462.3
Police and fire normal cost rate	12.79%	12.90%
Actuarial accrued liability	\$3,742.5	\$3,064.1
Actuarial asset value	2,389.1	2,024.6
Unfunded actuarial accrued liability	1,353.5	1,039.5
Funded status	64%	66%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	14%	11%
UAL rate	1.27%	1.01%

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
RHIA		
Normal cost	\$3.3	\$3.5
Tier 1 / Tier 2 valuation payroll	4,730.8	4,933.1
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	\$465.6	\$468.4
Actuarial asset value	419.3	395.9
Unfunded actuarial accrued liability	46.3	72.5
Funded status	90%	85%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	0%	1%
UAL rate	0.43%	0.43%

Side Account Information

Reconciliation of Side Accounts

The following table reconciles the total side account from the beginning of the year to the end of the year. Side account transfers were calculated by PERS and made on a monthly basis. The amount of these transfers is shown in the table below.

All information in this table has been provided by PERS.

	New	Continuing	Total
1. Side account as of December 31, 2014	N/A		
2. Deposits made during 2015		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2015			
5. Side account earnings during 2015			
6. Side account as of December 31, 2015 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2015	December 31, 2014
Side account 1	\$0	\$0
Side account 2	0	0
Side account 3	0	0
Total	\$0	\$0

Development of Side Account Rate

The rate relief attributable to an employer's side account is determined by amortizing the side account balance on the valuation date over a fixed period, and expressing the result as a percentage of combined valuation payroll. For side accounts established prior to December 31, 2009, the fixed period ends December 31, 2027. For side accounts established at a later date, the fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2015	December 31, 2014
1. Total side account	\$0	\$0
2. Combined valuation payroll	4,230,537	3,992,085
3. Average Amortization factor	9.504	10.118
4. Total side account rate (-1. ÷ 2. ÷ 3.)¹	0.00%	0.00%

¹ For employers with more than one side account, the Total Side Account Rate is determined by calculating the rate on each side account separately and adding the rates together.

Tier 1/Tier 2 Valuation Results

Assets

A summary of the market value of pension assets, and reconciliation from the prior year are shown below.

Summary of Market Value of Tier 1/Tier 2 Pension Assets

	December 31, 2015	December 31, 2014
1. Member reserves	\$770,444	\$802,593
2. Employer reserves	4,508,294	4,636,755
3. Benefits in force reserve	1,207,251	1,030,101
4. Total market value of assets (1. + 2. + 3.)	\$6,485,989	\$6,469,449

The market value of member and employer reserves is provided by PERS. The benefits in force reserve provided by PERS is allocated each year among employers in proportion to their liabilities for retired members and beneficiaries.

Reconciliation of Tier 1/Tier 2 Pension Assets

	December 31, 2014 to December 31, 2015
1. Market value of assets at beginning of year	\$6,469,449
2. Regular employer contributions	231,064
3. Benefit payments and expense	(219,540)
4. Adjustments ¹	(139,531)
5. Interest credited	144,548
6. Total transferred from side accounts	0
7. Market value of assets at end of year (1. + 2. + 3. + 4. + 5. + 6.)	\$6,485,989

¹ Note the adjustment item above includes a reallocation of the benefits in force reserve, transfers to Multnomah Fire District #10, and other adjustments made by PERS.

Tier 1/Tier 2 Valuation Results

Liabilities

Normal Cost

The normal cost represents the value of benefits assigned to the next year of service by the actuarial cost method. If all actuarial assumptions are met, the normal cost represents the amount that would need to be contributed each year to fund plan benefits. Amounts shown below include assumed administrative expenses, which are allocated pro-rata based on normal cost.

Summary of Normal Cost by Tier/Member Classification

	December 31, 2015	December 31, 2014
Tier 1 Police & Fire	\$0	\$0
Tier 1 General Service	62,235	79,341
Tier 2 Police & Fire	0	0
Tier 2 General Service	228,299	223,228
Total	\$290,534	\$302,569

Change in Tier 1/Tier 2 Normal Cost

The following table shows the impact of the assumption, method, and plan changes on normal cost as of December 31, 2015.

	Before Changes	After Changes	Net Change
Normal Cost	\$290,534	\$290,534	\$0

Tier 1/Tier 2 Valuation Results

Liabilities

Actuarial Accrued Liability

The actuarial accrued liability represents the value of benefits allocated to service performed before the valuation date by the actuarial cost method. If all actuarial assumptions are met, the actuarial accrued liability represents the amount of assets that would need to be accumulated as of the valuation date to provide for the portion of benefits allocated to service already performed.

Summary of Actuarial Accrued Liability by Tier/Member Classification

	December 31, 2015	December 31, 2014
Active Members		
▪ Tier 1 Police & Fire	\$0	\$0
▪ Tier 1 General Service	1,112,469	1,311,906
▪ Tier 2 Police & Fire	0	0
▪ Tier 2 General Service	4,763,129	4,398,001
▪ Total Active Members	\$5,875,598	\$5,709,907
Dormant Members	499,805	485,344
Retired Members and Beneficiaries	2,606,687	1,998,371
Total Actuarial Accrued Liability	\$8,982,090	\$8,193,622

Change in Tier 1/Tier 2 Actuarial Accrued Liability

The following table shows the impact of the assumption, method, and plan changes on the actuarial accrued liability as of December 31, 2015.

	Before Changes	After Changes	Net Change
Actuarial Accrued Liability	\$8,982,090	\$8,982,090	\$0

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Summary of UAL

The UAL represents the difference between the assets accumulated and the liability attributed to prior years of service by the cost method.

	December 31, 2015	December 31, 2014
1. Actuarial accrued liability	\$8,982,090	\$8,193,622
2. Actuarial value of assets	6,485,989	6,469,449
3. Unfunded accrued liability (1. – 2.)	2,496,101	1,724,173
4. Funded percentage (2. ÷ 1.)	72%	79%
5. Combined valuation payroll	\$4,230,537	\$3,992,085
6. Unfunded accrued liability as % of combined valuation payroll (3. ÷ 5.)	59%	43%

Reconciliation of UAL Bases

Beginning with the December 31, 2013 actuarial valuation, each odd-year valuation establishes a 20-year closed-period amortization schedule for outstanding Tier 1/Tier 2 UAL amounts. Amortization schedules are calculated based on the total Tier 1/Tier 2 UAL as of that valuation date less the remaining unamortized balance of previously established Tier 1/Tier 2 UAL bases.

Amortization Base	UAL December 31, 2014	Payment	Interest	UAL December 31, 2015	Next Year's Payment
December 31, 2013	\$706,566	\$52,926	\$50,878	\$704,518	\$54,779
December 31, 2015	N/A	N/A	N/A	\$1,791,583	\$129,637
Total				\$2,496,101	\$184,416

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Actuarial Gain or Loss since Prior Valuation

The system-wide actuarial valuation report contains a detailed analysis of gains and losses since the last valuation. The table below shows the gain or loss for the individual employer.

1. Expected actuarial accrued liability	
a. Actuarial accrued liability at December 31, 2014	\$8,193,622
b. Normal cost at December 31, 2014 (excluding assumed expenses)	289,566
c. Benefit payments during 2015	(217,844)
d. Interest at 7.50% to December 31, 2015	617,211
e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)	8,882,555
f. Change in actuarial accrued liability due to assumption, method, and plan changes	0
g. Expected actuarial accrued liability at December 31, 2015 (e. + f.)	8,882,555
2. Actuarial accrued liability at December 31, 2015	8,982,090
3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)	(99,535)
4. Expected actuarial value of assets	
a. Actuarial value of assets at December 31, 2014	6,469,449
b. Contributions for 2015 ¹	231,064
c. Benefit payments and expenses during 2015	(219,540)
d. Interest at 7.50% to December 31, 2015	485,641
e. Expected actuarial value of assets at December 31, 2015 (a. + b. + c. + d.)	6,966,613
5. Actuarial value of assets at December 31, 2015	6,485,989
6. Gain/(loss) on actuarial value of assets (5. - 4.e.)	(480,624)
7. Total actuarial gain/(loss) (3. + 6.)	(\$580,159)

Unfunded Accrued Liability Reconciliation

A reconciliation of the Tier 1/Tier 2 UAL from December 31, 2014 is provided below.

1. UAL at December 31, 2014	\$1,724,173
2. Expected increase	191,769
3. Liability (gain)/loss	99,535
4. Asset (gain)/loss	480,624
5. Change due to changes in assumptions, methods, and plan provisions	0
6. UAL at December 31, 2015 (1. + 2. + 3. + 4. + 5.)	\$2,496,101

¹ Includes rate relief from side accounts.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Normal Cost Rate

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

Development of Tier 1/Tier 2 Normal Cost Rate

	December 31, 2015			December 31, 2014		
	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate
Tier 1 Police & Fire	\$0	\$0	0.00%	\$0	\$0	0.00%
Tier 1 General Service	62,235	381,916	16.30%	79,341	532,347	14.90%
Tier 2 Police & Fire	0	0	0.00%	0	0	0.00%
Tier 2 General Service	228,299	1,782,851	12.81%	223,228	1,743,908	12.80%
Total	\$290,534	\$2,164,767	13.42%	\$302,569	\$2,276,255	13.29%

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Development of Tier 1/Tier 2 UAL Rates

The UAL rate is determined by calculating the next year's scheduled payment to the UAL as a percentage of combined valuation payroll.

	December 31, 2015	December 31, 2014
1. Total Tier 1/Tier 2 UAL	\$2,496,101	\$1,724,173
2. Next year's Tier 1/Tier 2 UAL payment	184,416	126,559
3. Combined valuation payroll	4,230,537	3,992,085
4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)	4.36%	3.17%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	13.42%	13.29%
b. Tier 1/Tier 2 UAL rate	4.36%	3.17%
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate (a. + b. + c.)	17.93%	16.61%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Adjustments Due to Rate Collar and Minimum Rate Requirements

Employer contribution rates are generally limited to change by no more than the greater of 3 percent of payroll or 20 percent from the current contribution rate. However, if the funded percentage excluding side accounts is below 60 percent or above 140 percent the rate collar doubles in size. If the funded percentage excluding side accounts is between 60 and 70 percent or 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

The table below shows the current contribution rate for the period from July 1, 2015 through June 30, 2017, develops the maximum and minimum contribution rates effective July 1, 2017 based on the collar, and calculates the net adjustment due to the collar and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

1. Current net Tier 1/Tier 2 pension contribution rate		11.88%
2. Employer contribution rate attributable to side accounts		0.00%
3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)		11.88%
4. Size of rate collar		
a. 20% of current employer contribution rate (20% x 3.)		2.38%
b. Preliminary size of rate collar (maximum of 3% or a.)		3.00%
c. Funded percentage		72%
d. Size of rate collar (If c. < 60% or c. > 140%, 2 x b. If c. is 70%-130%, b. Otherwise, a graded rate between b. and 2 x b.)		3.00%
5. July 1, 2017 minimum employer contribution rate	(3. – 4.d. but not < 0%)	8.88%
6. July 1, 2017 maximum employer contribution rate	(3. + 4.d.)	14.88%
7. July 1, 2017 total pension rate, before adjustment		17.93%
8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)		(3.05%)
9. July 1, 2017 Tier 1/Tier 2 UAL rate, before collar		4.36%
10. July 1, 2017 Tier 1/Tier 2 UAL rate, after collar	(8. + 9.)	1.31%
11. July 1, 2017 Tier 1/Tier 2 pension rate, after collar		14.88%
12. Tier 1/Tier 2 retiree healthcare rate		0.50%
13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)		0.00%
14. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment		13.42%
15. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)		13.42%
16. July 1, 2017 Tier 1/Tier 2 pension rate, after minimum adjustment	(11. + 13.)	14.88%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Post-Rate Collar)

The table below summarizes the employer's pension contribution rate for Tier 1 /Tier 2 after adjustments for the rate collar and the 6 percent of payroll minimum employer contribution rate.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	13.42%	13.29%
b. Tier 1/Tier 2 UAL rate	1.31%	1.44%
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate <i>(a. + b. + c., minimum of 5.50%)</i>	14.88%	14.88%

Data

Demographic Information

Employer Valuation Payroll

	General Service	Police & Fire	Total
Tier 1	\$381,916	\$0	\$381,916
Tier 2	1,782,851	0	1,782,851
Tier 1/Tier 2 valuation payroll	2,164,767	0	2,164,767
OPSRP valuation payroll	2,065,770	0	2,065,770
Combined valuation payroll	\$4,230,537	\$0	\$4,230,537

Employer Member Census

	December 31							
	2015				2014			
	Tier 1	Tier 2	OPSRP	Total	Tier 1	Tier 2	OPSRP	Total
Active Members ¹								
General Service	9	29	54	92	12	32	49	93
Police & Fire	0	0	0	0	0	0	0	0
Total	9	29	54	92	12	32	49	93
Active Members with previous service segments with the employer								
General Service	2	9	N/A	11	3	7	N/A	10
Police & Fire	0	0	N/A	0	0	0	N/A	0
Total	2	9	N/A	11	3	7	N/A	10
Dormant Members								
General Service	3	14	5	22	3	16	5	24
Police & Fire	0	0	0	0	0	0	0	0
Total	3	14	5	22	3	16	5	24
Retired Members and Beneficiaries								
General Service	20	8	1	29	16	6	1	23
Police & Fire	0	0	0	0	0	0	0	0
Total	20	8	1	29	16	6	1	23
Grand Total Number of Members	34	60	60	154	34	61	55	150

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Data

Demographic Information (continued)

Employer Tier 1/Tier 2 Active Members as of December 31, 2015

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
<20										
20-24										
25-29										
30-34										
35-39										
40-44			2	1						3
45-49			2	3						5
50-54			6	2	2					10
55-59			3	7		1				11
60-64			1	3			1			5
65-69				2	1	1				4
70-74										
75+										
Total	0	0	14	18	3	2	1	0	0	38

Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2015

Dormant Members			Retired Members and Beneficiaries		
Age	Count	Average Deferred Monthly Benefit	Age	Count	Average Monthly Benefit
<20			<45		
20-24			45-49		
25-29			50-54		
30-34			55-59	1	1,380
35-39	1	492	60-64	7	688
40-44	1	1	65-69	10	518
45-49	1	791	70-74	5	726
50-54	4	508	75-79	5	483
55-59	3	184	80-84		
60-64	3	296	85-89		
65-69	2	361	90-94		
70-74	1	120	95-99		
75+	1	113	100+		
Total	17	336	Total	28	622

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2015 valuation can be found in the system-wide actuarial valuation report.

Actuarial Methods and Valuation Procedures

A brief summary of the methods used in this valuation is shown below:

<i>Actuarial cost method</i>	Entry Age Normal.
<i>Amortization Method</i>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. Gains and losses between subsequent odd-year valuations will be amortized as a level percentage of projected combined valuation payroll over a closed 20 year period.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.</p>

Economic Assumptions

A brief summary of the key economic assumptions used in this valuation is shown below:

<i>Net investment return</i>	7.50% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.50% compounded annually on members' regular account balances.</p> <p>7.50% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 6.3% in 2016 to 4.4% in 2094.
<i>Administrative Expenses</i>	<p>\$5.5 million added to OPSRP normal cost.</p> <p>\$33.0 million added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2014 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

There were no changes in actuarial methods and allocation procedures since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA actuarial methods and allocation procedures is provided as part of the system-wide valuation report.

Changes in Assumptions

There were no changes in assumptions since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA assumptions is provided as part of the system-wide valuation report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Glossary

Actuarial Accrued Liability

The portion of the present value of prospective benefits allocated to service and compensation before the valuation date in accordance with the actuarial cost method.

Actuarial Asset Value

The value of assets used in calculating the required contributions. The actuarial asset value may be equal to the fair market value of assets, or it may spread the recognition of certain investment gains or losses over a period of years in accordance with an asset valuation method.

Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disablement and retirement; rates of investment earnings and other relevant items.

Actuarial Cost Method

Sometimes called “funding method,” a particular technique used by actuaries to establish the amount and incidence of the annual actuarial cost of pension plan benefits, or normal cost, and the related unfunded actuarial accrued liability. Ordinarily, the annual contribution to the plan comprises the normal cost and an amount for amortization of the unfunded actuarial accrued liability.

Actuarial Gain or (Loss)

A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions, during the period between two actuarial valuation dates, as determined in accordance with a particular actuarial cost method.

Combined Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for both Tier 1/Tier 2 and OPSRP active members. This payroll is used to calculate UAL rates.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

Employer Contribution Rate

Consists of the normal cost rate and the UAL rates, plus adjustments for other items such as side account rate offsets.

Funded Status

The actuarial value of assets expressed as a percentage of the actuarial accrued liability.

Normal Cost

The annual cost allocated to the current year, under the actuarial cost method in use. The normal cost divided by the applicable payroll is the normal cost rate.

OPSRP Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for OPSRP active members. This payroll is used to calculate OPSRP normal cost rates.

Glossary

Pre-SLGRP Liability

The sum of Pre-SLGRP Pooled Liabilities and Transition Liabilities.

Pre-SLGRP Pooled Liability

The difference between the total UAL and the UAL attributable to the SLGRP for a pool of employers that joined the SLGRP. There are currently two pre-SLGRP pools. One was created for State Agencies and Community Colleges when the SLGRP was formed. The other one was created when the Local Government Rate Pool joined the SLGRP.

Present Value

Sometimes called “actuarial present value,” the estimated cost (as of the valuation date) of a series of future payments. The present value is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Rate Collar

A methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution rate and funded status.

Required Supplementary Information (RSI)

Schedules, statistical data, and other information that are an essential part of financial reporting and should be presented with, but are not part of, the basic financial statements of a governmental entity.

Statement No. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions.

Statement No. 68 of the Governmental Accounting Standards Board (GASB 68)

The accounting standard governing a state or local governmental employer’s accounting for pensions for fiscal years beginning after June 15, 2014.

Statement No. 75 of the Governmental Accounting Standards Board (GASB 75)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

The difference between the total UAL and the UAL attributable to the SLGRP for an individual employer that joined the SLGRP or the Local Government Rate Pool.

Unfunded Accrued Liability (UAL)

The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. The UAL is divided by combined valuation payroll and an amortization factor to determine an initial pre-collar UAL rate. The final UAL rate can be adjusted by the rate collar.



Milliman
111 SW Fifth Avenue, Suite 3700
Portland, OR 97204-3654
503 227 0634

This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

September 2016

Deschutes Valley Water District/2527
Oregon Public Employees Retirement System

Dear Sir or Madam:

As part of our engagement with the Oregon Public Employees Retirement Board, we performed a system-wide actuarial valuation of the Oregon Public Employees Retirement System (“PERS” or “the System”) as of December 31, 2015. The attached report, which is an informational supplement to the system-wide report, provides you with employer-specific contribution rates that will become effective July 1, 2017. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information will be provided separately by PERS and is not included in this report.

This report reflects the System's benefit provisions in effect as of December 31, 2015. The full development of the valuation results for the OPSRP and Retiree Health Insurance Account (RHIA) programs can be found in the separate system-wide actuarial valuation report. Costs of the IAP (Individual Account Program) are not included in this or the system-wide actuarial valuation report. Further, costs of pension obligation bond payments are not included in this or the system-wide actuarial valuation report.

If you have any questions about this report, please contact Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, OPSRP general service, and OPSRP police and fire payroll,
- Information to assist you in completing GASB 45 financial reporting requirements, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- Detailed development of Tier 1/Tier 2 valuation results,
- A brief summary of methods and assumptions, and
- A brief summary of any changes in System benefit provisions.

Additional information is provided in the system-wide actuarial valuation report, which is available at www.oregon.gov/PERS/Pages/section/financial_reports/financials.aspx.



September 2016
Deschutes Valley Water District/2527

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the System's staff. This information includes, but is not limited to, System benefit provisions as defined by statute, member census data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for the System have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer a reasonable estimate of anticipated experience affecting the System.

A valuation report is only an estimate of the System's financial condition as of a single date. It can neither predict the System's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of System benefits, only the timing of System contributions. While a valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: System experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the System's funded status); and changes in System benefit provisions or applicable law. Due to the limited scope of this assignment, we did not perform an analysis of the potential range of future measurements. The Board has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in September 2015.

Some of the actuarial computations presented in this report are for purposes of determining the contribution rates effective from July 2017 to June 2019 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.



September 2016
Deschutes Valley Water District/2527

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the System. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

Additional information is provided in the system-wide actuarial valuation report.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Larrabee".

Matt Larrabee, FSA, EA, MAAA
Principal and Consulting Actuary

A handwritten signature in black ink, appearing to read "Scott Preppernau".

Scott Preppernau, FSA, EA, MAAA
Principal and Consulting Actuary



ACTUARIAL VALUATION REPORT DECEMBER 31, 2015

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

INDEPENDENT EMPLOYERS

Deschutes Valley Water District -- #2527

September 2016

CONTENTS

Executive Summary **1**

Employer Contribution Rates 1

Accounting Information 3

Principal Valuation Results 5

 ▪ Employer 5

 ▪ Tier 1/Tier 2 6

 ▪ OPSRP 7

 ▪ Retiree Healthcare 7

Side Account Information **8**

Tier 1/Tier 2 Valuation Results **10**

Assets 10

Liabilities 11

Unfunded Accrued Liability (UAL) 13

Contribution Rate Development 15

Data **20**

Brief Summary of Actuarial Methods and Assumptions **22**

Brief Summary of Changes in Plan Provisions **24**

Glossary **25**

Executive Summary

Milliman has prepared this report for Deschutes Valley Water District to:

- Provide summary December 31, 2015 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2017 through June 30, 2019,
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2015, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45. GASB 68 information will be provided separately by PERS and is not included in this report.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2015 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Deschutes Valley Water District.

Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2017 through June 30, 2019 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

Employer Rates Effective July 1, 2017 for Deschutes Valley Water District

	Payroll		
	Tier 1/Tier 2	OPSRP General Service	Police & Fire
Pension			
Normal cost rate	14.13%	8.02%	12.79%
Tier 1/Tier 2 UAL rate ¹	8.48%	8.48%	8.48%
OPSRP UAL rate	1.27%	1.27%	1.27%
Side account rate relief	0.00%	0.00%	0.00%
Net pension contribution rate	23.88%	17.77%	22.54%
Retiree Healthcare			
Normal cost rate	0.07%	0.00%	0.00%
UAL rate	0.43%	0.43%	0.43%
Net retiree healthcare rate	0.50%	0.43%	0.43%
Total net employer contribution rate	24.38%	18.20%	22.97%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate.

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 Biennium

The rate collar limits changes in contribution rates, but does not limit changes in rates for individual employers related to side accounts. The table below shows the possible minimum and maximum rates first effective as of July 1, 2019, which will depend on the funded status as of December 31, 2017. If the employer's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2015 is 68%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	22.61%	22.61%
Minimum 2019-2021 Rate	18.09%	13.57%
Maximum 2019-2021 Rate	27.13%	31.65%

Executive Summary

Accounting Information

Milliman is not an accounting or audit firm and cannot provide accounting advice. Milliman is not responsible for the interpretation of, or compliance with, accounting standards; citations to, and descriptions of accounting standards provided in this report are for reference purposes only. The information provided in this section is intended to assist the employer in completing its financial statements, but any accounting determination should be reviewed by your auditor.

Pension

In June 2012 the GASB issued Statement No. 68, which replaced GASB 27 and governs employer financial reporting for fiscal years beginning after June 15, 2014. The new standard replaced many of the key elements of the prior reporting requirements. Under the new rules, employers are required to record a balance sheet liability for their unfunded pension obligations. In addition, the timing and coordination of plan and employer reporting has changed under the new requirements. GASB 68 information for employers will be provided separately by PERS and is not included in this report.

Schedule of Funding Progress

Under GASB 27, the Schedule of Funding Progress for Tier 1/Tier 2 pension liabilities was reported in the Required Supplementary Information. This schedule is no longer required now that GASB 68 has replaced GASB 27. However, for additional information and the sake of historical comparison, the updated schedule is shown below for the last several valuations. For employers with side accounts, the actuarial value of assets in this Schedule includes the value of the employer's side accounts.

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (b - a)	Funded Ratio (a ÷ b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a) ÷ c)
12/31/2010	\$7,454,286	\$9,509,643	\$2,055,357	78%	\$1,701,768	121%
12/31/2011	7,556,537	10,044,617	2,488,080	75%	1,753,293	142%
12/31/2012	8,072,355	9,748,713	1,676,358	83%	1,729,841	97%
12/31/2013	9,062,256	10,335,094	1,272,838	88%	1,771,241	72%
12/31/2014	9,356,834	12,194,300	2,837,466	77%	1,697,650	167%
12/31/2015	8,920,468	13,131,220	4,210,752	68%	1,560,891	270%

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) is a cost-sharing pool under Statement No. 45 of the Governmental Accounting Standards Board (GASB 45). Consequently, each employer reports the contractually required contribution. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 was calculated as a part of this valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
	Tier 1 / Tier 2	OPSRP	
		General Service	Police & Fire
July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern employer financial reporting for retiree healthcare obligations for fiscal years beginning after June 15, 2017. In general, the changes required by GASB 75 parallel those that occurred for pension reporting when GASB 68 replaced GASB 27. Accounting information for reporting under GASB 75 will be provided separately and is not included in this report.

Executive Summary

Principal Valuation Results

A summary of principal valuation results from the current valuation and the prior valuation follows. Any changes in actuarial assumptions, methods or plan provisions between the two valuations are described later in this report. More detailed information can be found in the system-wide actuarial valuation report.

Deschutes Valley Water District

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
T1/T2 UAL	\$4,210,752	\$2,837,466
Allocated pooled OPSRP UAL	221,902	194,078
Side account	0	0
Net unfunded pension actuarial accrued liability	4,432,654	3,031,544
Combined valuation payroll	1,560,891	1,697,650
Net pension UAL as a percentage of payroll	284%	179%
Calculated side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	\$7,579	\$13,494

In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer’s combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.

Executive Summary

Principal Valuation Results (continued)

Tier 1/Tier 2

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
Normal cost	\$168,356	\$200,724
Tier 1/Tier 2 valuation payroll	1,191,614	1,325,497
Tier 1/Tier 2 pension normal cost rate	14.13%	15.14%
Tier 1/ Tier 2 Actuarial accrued liability	\$13,131,220	\$12,194,300
Actuarial asset value	8,920,468	9,356,834
Tier 1/Tier 2 Unfunded actuarial accrued liability	4,210,752	2,837,466
Tier 1/ Tier 2 Funded status	68%	77%
Combined valuation payroll	\$1,560,891	\$1,697,650
Tier 1/Tier 2 UAL as a percentage of payroll	270%	167%
Tier 1/Tier 2 UAL rate (includes Multnomah Fire District #10)	8.48%	6.74%
Tier 1/Tier 2 active members ¹	14	16
Tier 1/Tier 2 dormant members	2	2
Tier 1/Tier 2 retirees and beneficiaries	17	15

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
General service normal cost	\$342.2	\$301.3
OPSRP general service valuation payroll	4,266.9	3,720.4
General service normal cost rate	8.02%	8.10%
Police and fire normal cost	\$69.9	\$59.6
OPSRP police and fire valuation payroll	546.4	462.3
Police and fire normal cost rate	12.79%	12.90%
Actuarial accrued liability	\$3,742.5	\$3,064.1
Actuarial asset value	2,389.1	2,024.6
Unfunded actuarial accrued liability	1,353.5	1,039.5
Funded status	64%	66%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	14%	11%
UAL rate	1.27%	1.01%

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
RHIA		
Normal cost	\$3.3	\$3.5
Tier 1 / Tier 2 valuation payroll	4,730.8	4,933.1
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	\$465.6	\$468.4
Actuarial asset value	419.3	395.9
Unfunded actuarial accrued liability	46.3	72.5
Funded status	90%	85%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	0%	1%
UAL rate	0.43%	0.43%

Side Account Information

Reconciliation of Side Accounts

The following table reconciles the total side account from the beginning of the year to the end of the year. Side account transfers were calculated by PERS and made on a monthly basis. The amount of these transfers is shown in the table below.

All information in this table has been provided by PERS.

	New	Continuing	Total
1. Side account as of December 31, 2014	N/A		
2. Deposits made during 2015		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2015			
5. Side account earnings during 2015			
6. Side account as of December 31, 2015 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2015	December 31, 2014
Side account 1	\$0	\$0
Side account 2	0	0
Side account 3	0	0
Total	\$0	\$0

Development of Side Account Rate

The rate relief attributable to an employer's side account is determined by amortizing the side account balance on the valuation date over a fixed period, and expressing the result as a percentage of combined valuation payroll. For side accounts established prior to December 31, 2009, the fixed period ends December 31, 2027. For side accounts established at a later date, the fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2015	December 31, 2014
1. Total side account	\$0	\$0
2. Combined valuation payroll	1,560,891	1,697,650
3. Average Amortization factor	9.504	10.118
4. Total side account rate (-1. ÷ 2. ÷ 3.)¹	0.00%	0.00%

¹ For employers with more than one side account, the Total Side Account Rate is determined by calculating the rate on each side account separately and adding the rates together.

Tier 1/Tier 2 Valuation Results

Assets

A summary of the market value of pension assets, and reconciliation from the prior year are shown below.

Summary of Market Value of Tier 1/Tier 2 Pension Assets

	December 31, 2015	December 31, 2014
1. Member reserves	\$1,401,879	\$1,864,761
2. Employer reserves	3,792,782	4,219,551
3. Benefits in force reserve	3,725,807	3,272,522
4. Total market value of assets (1. + 2. + 3.)	\$8,920,468	\$9,356,834

The market value of member and employer reserves is provided by PERS. The benefits in force reserve provided by PERS is allocated each year among employers in proportion to their liabilities for retired members and beneficiaries.

Reconciliation of Tier 1/Tier 2 Pension Assets

	December 31, 2014 to December 31, 2015
1. Market value of assets at beginning of year	\$9,356,834
2. Regular employer contributions	249,250
3. Benefit payments and expense	(677,543)
4. Adjustments ¹	(241,777)
5. Interest credited	233,704
6. Total transferred from side accounts	0
7. Market value of assets at end of year (1. + 2. + 3. + 4. + 5. + 6.)	\$8,920,468

¹ Note the adjustment item above includes a reallocation of the benefits in force reserve, transfers to Multnomah Fire District #10, and other adjustments made by PERS.

Tier 1/Tier 2 Valuation Results

Liabilities

Normal Cost

The normal cost represents the value of benefits assigned to the next year of service by the actuarial cost method. If all actuarial assumptions are met, the normal cost represents the amount that would need to be contributed each year to fund plan benefits. Amounts shown below include assumed administrative expenses, which are allocated pro-rata based on normal cost.

Summary of Normal Cost by Tier/Member Classification

	December 31, 2015	December 31, 2014
Tier 1 Police & Fire	\$0	\$0
Tier 1 General Service	114,700	150,223
Tier 2 Police & Fire	0	0
Tier 2 General Service	53,656	50,501
Total	\$168,356	\$200,724

Change in Tier 1/Tier 2 Normal Cost

The following table shows the impact of the assumption, method, and plan changes on normal cost as of December 31, 2015.

	Before Changes	After Changes	Net Change
Normal Cost	\$168,356	\$168,356	\$0

Tier 1/Tier 2 Valuation Results

Liabilities

Actuarial Accrued Liability

The actuarial accrued liability represents the value of benefits allocated to service performed before the valuation date by the actuarial cost method. If all actuarial assumptions are met, the actuarial accrued liability represents the amount of assets that would need to be accumulated as of the valuation date to provide for the portion of benefits allocated to service already performed.

Summary of Actuarial Accrued Liability by Tier/Member Classification

	December 31, 2015	December 31, 2014
Active Members		
▪ Tier 1 Police & Fire	\$0	\$0
▪ Tier 1 General Service	3,903,473	4,823,387
▪ Tier 2 Police & Fire	0	0
▪ Tier 2 General Service	1,120,671	963,394
▪ Total Active Members	\$5,024,144	\$5,786,781
Dormant Members	62,346	58,907
Retired Members and Beneficiaries	8,044,730	6,348,612
Total Actuarial Accrued Liability	\$13,131,220	\$12,194,300

Change in Tier 1/Tier 2 Actuarial Accrued Liability

The following table shows the impact of the assumption, method, and plan changes on the actuarial accrued liability as of December 31, 2015.

	Before Changes	After Changes	Net Change
Actuarial Accrued Liability	\$13,131,220	\$13,131,220	\$0

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Summary of UAL

The UAL represents the difference between the assets accumulated and the liability attributed to prior years of service by the cost method.

	December 31, 2015	December 31, 2014
1. Actuarial accrued liability	\$13,131,220	\$12,194,300
2. Actuarial value of assets	8,920,468	9,356,834
3. Unfunded accrued liability (1. – 2.)	4,210,752	2,837,466
4. Funded percentage (2. ÷ 1.)	68%	77%
5. Combined valuation payroll	\$1,560,891	\$1,697,650
6. Unfunded accrued liability as % of combined valuation payroll (3. ÷ 5.)	270%	167%

Reconciliation of UAL Bases

Beginning with the December 31, 2013 actuarial valuation, each odd-year valuation establishes a 20-year closed-period amortization schedule for outstanding Tier 1/Tier 2 UAL amounts. Amortization schedules are calculated based on the total Tier 1/Tier 2 UAL as of that valuation date less the remaining unamortized balance of previously established Tier 1/Tier 2 UAL bases.

Amortization Base	UAL December 31, 2014	Payment	Interest	UAL December 31, 2015	Next Year's Payment
December 31, 2013	\$1,275,554	\$95,547	\$91,849	\$1,271,856	\$98,892
December 31, 2015	N/A	N/A	N/A	\$2,938,896	\$212,655
Total				\$4,210,752	\$311,547

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Actuarial Gain or Loss since Prior Valuation

The system-wide actuarial valuation report contains a detailed analysis of gains and losses since the last valuation. The table below shows the gain or loss for the individual employer.

1. Expected actuarial accrued liability	
a. Actuarial accrued liability at December 31, 2014	\$12,194,300
b. Normal cost at December 31, 2014 (excluding assumed expenses)	192,011
c. Benefit payments during 2015	(672,309)
d. Interest at 7.50% to December 31, 2015	896,561
e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)	12,610,563
f. Change in actuarial accrued liability due to assumption, method, and plan changes	0
g. Expected actuarial accrued liability at December 31, 2015 (e. + f.)	12,610,563
2. Actuarial accrued liability at December 31, 2015	13,131,220
3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)	(520,657)
4. Expected actuarial value of assets	
a. Actuarial value of assets at December 31, 2014	9,356,834
b. Contributions for 2015 ¹	249,250
c. Benefit payments and expenses during 2015	(677,543)
d. Interest at 7.50% to December 31, 2015	685,702
e. Expected actuarial value of assets at December 31, 2015 (a. + b. + c. + d.)	9,614,242
5. Actuarial value of assets at December 31, 2015	8,920,468
6. Gain/(loss) on actuarial value of assets (5. - 4.e.)	(693,774)
7. Total actuarial gain/(loss) (3. + 6.)	(\$1,214,431)

Unfunded Accrued Liability Reconciliation

A reconciliation of the Tier 1/Tier 2 UAL from December 31, 2014 is provided below.

1. UAL at December 31, 2014	\$2,837,466
2. Expected increase	158,855
3. Liability (gain)/loss	520,657
4. Asset (gain)/loss	693,774
5. Change due to changes in assumptions, methods, and plan provisions	0
6. UAL at December 31, 2015 (1. + 2. + 3. + 4. + 5.)	\$4,210,752

¹ Includes rate relief from side accounts.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Normal Cost Rate

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

Development of Tier 1/Tier 2 Normal Cost Rate

	December 31, 2015			December 31, 2014		
	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate
Tier 1 Police & Fire	\$0	\$0	0.00%	\$0	\$0	0.00%
Tier 1 General Service	114,700	714,430	16.05%	150,223	878,957	17.09%
Tier 2 Police & Fire	0	0	0.00%	0	0	0.00%
Tier 2 General Service	53,656	477,184	11.24%	50,501	446,540	11.31%
Total	\$168,356	\$1,191,614	14.13%	\$200,724	\$1,325,497	15.14%

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Development of Tier 1/Tier 2 UAL Rates

The UAL rate is determined by calculating the next year's scheduled payment to the UAL as a percentage of combined valuation payroll.

	December 31, 2015	December 31, 2014
1. Total Tier 1/Tier 2 UAL	\$4,210,752	\$2,837,466
2. Next year's Tier 1/Tier 2 UAL payment	311,547	208,565
3. Combined valuation payroll	1,560,891	1,697,650
4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)	19.96%	12.29%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	14.13%	15.14%
b. Tier 1/Tier 2 UAL rate	19.96%	12.29%
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate (a. + b. + c.)	34.24%	27.58%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Adjustments Due to Rate Collar and Minimum Rate Requirements

Employer contribution rates are generally limited to change by no more than the greater of 3 percent of payroll or 20 percent from the current contribution rate. However, if the funded percentage excluding side accounts is below 60 percent or above 140 percent the rate collar doubles in size. If the funded percentage excluding side accounts is between 60 and 70 percent or 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

The table below shows the current contribution rate for the period from July 1, 2015 through June 30, 2017, develops the maximum and minimum contribution rates effective July 1, 2017 based on the collar, and calculates the net adjustment due to the collar and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

1. Current net Tier 1/Tier 2 pension contribution rate		18.23%
2. Employer contribution rate attributable to side accounts		0.00%
3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)		18.23%
4. Size of rate collar		
a. 20% of current employer contribution rate (20% x 3.)		3.65%
b. Preliminary size of rate collar (maximum of 3% or a.)		3.65%
c. Funded percentage		68%
d. Size of rate collar (If c. < 60% or c. > 140%, 2 x b. If c. is 70%-130%, b. Otherwise, a graded rate between b. and 2 x b.)		4.38%
5. July 1, 2017 minimum employer contribution rate	(3. – 4.d. but not < 0%)	13.85%
6. July 1, 2017 maximum employer contribution rate	(3. + 4.d.)	22.61%
7. July 1, 2017 total pension rate, before adjustment		34.24%
8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)		(11.63%)
9. July 1, 2017 Tier 1/Tier 2 UAL rate, before collar		19.96%
10. July 1, 2017 Tier 1/Tier 2 UAL rate, after collar	(8. + 9.)	8.33%
11. July 1, 2017 Tier 1/Tier 2 pension rate, after collar		22.61%
12. Tier 1/Tier 2 retiree healthcare rate		0.50%
13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)		0.00%
14. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment		14.13%
15. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)		14.13%
16. July 1, 2017 Tier 1/Tier 2 pension rate, after minimum adjustment	(11. + 13.)	22.61%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Post-Rate Collar)

The table below summarizes the employer's pension contribution rate for Tier 1 /Tier 2 after adjustments for the rate collar and the 6 percent of payroll minimum employer contribution rate.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	14.13%	15.14%
b. Tier 1/Tier 2 UAL rate	8.33%	6.59%
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate <i>(a. + b. + c., minimum of 5.50%)</i>	22.61%	21.88%

Data

Demographic Information

Employer Valuation Payroll

	General Service	Police & Fire	Total
Tier 1	\$714,430	\$0	\$714,430
Tier 2	477,184	0	477,184
Tier 1/Tier 2 valuation payroll	1,191,614	0	1,191,614
OPSRP valuation payroll	369,277	0	369,277
Combined valuation payroll	\$1,560,891	\$0	\$1,560,891

Employer Member Census

	December 31							
	2015				2014			
	Tier 1	Tier 2	OPSRP	Total	Tier 1	Tier 2	OPSRP	Total
Active Members ¹								
General Service	8	6	5	19	10	6	5	21
Police & Fire	0	0	0	0	0	0	0	0
Total	8	6	5	19	10	6	5	21
Active Members with previous service segments with the employer								
General Service	0	0	N/A	0	0	0	N/A	0
Police & Fire	0	0	N/A	0	0	0	N/A	0
Total	0	0	N/A	0	0	0	N/A	0
Dormant Members								
General Service	1	1	2	4	1	1	1	3
Police & Fire	0	0	0	0	0	0	0	0
Total	1	1	2	4	1	1	1	3
Retired Members and Beneficiaries								
General Service	16	1	0	17	15	0	0	15
Police & Fire	0	0	0	0	0	0	0	0
Total	16	1	0	17	15	0	0	15
Grand Total Number of Members	25	8	7	40	26	7	6	39

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Data

Demographic Information (continued)

Employer Tier 1/Tier 2 Active Members as of December 31, 2015

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
<20										
20-24										
25-29										
30-34										
35-39				1						1
40-44			1		2					3
45-49				1	2					3
50-54			2				1			3
55-59						1	1			2
60-64				1						1
65-69								1		1
70-74										
75+										
Total	0	0	3	3	4	1	2	1	0	14

Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2015

Dormant Members			Retired Members and Beneficiaries		
Age	Count	Average Deferred Monthly Benefit	Age	Count	Average Monthly Benefit
<20			<45		
20-24			45-49		
25-29			50-54		
30-34			55-59	3	1,647
35-39			60-64	5	4,282
40-44			65-69	4	1,767
45-49			70-74	3	2,856
50-54			75-79	1	4,071
55-59	1	293	80-84	1	2,656
60-64	1	80	85-89		
65-69			90-94		
70-74			95-99		
75+			100+		
Total	2	187	Total	17	2,866

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2015 valuation can be found in the system-wide actuarial valuation report.

Actuarial Methods and Valuation Procedures

A brief summary of the methods used in this valuation is shown below:

<i>Actuarial cost method</i>	Entry Age Normal.
<i>Amortization Method</i>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. Gains and losses between subsequent odd-year valuations will be amortized as a level percentage of projected combined valuation payroll over a closed 20 year period.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.</p>

Economic Assumptions

A brief summary of the key economic assumptions used in this valuation is shown below:

<i>Net investment return</i>	7.50% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.50% compounded annually on members' regular account balances.</p> <p>7.50% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 6.3% in 2016 to 4.4% in 2094.
<i>Administrative Expenses</i>	<p>\$5.5 million added to OPSRP normal cost.</p> <p>\$33.0 million added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2014 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

There were no changes in actuarial methods and allocation procedures since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA actuarial methods and allocation procedures is provided as part of the system-wide valuation report.

Changes in Assumptions

There were no changes in assumptions since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA assumptions is provided as part of the system-wide valuation report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Glossary

Actuarial Accrued Liability

The portion of the present value of prospective benefits allocated to service and compensation before the valuation date in accordance with the actuarial cost method.

Actuarial Asset Value

The value of assets used in calculating the required contributions. The actuarial asset value may be equal to the fair market value of assets, or it may spread the recognition of certain investment gains or losses over a period of years in accordance with an asset valuation method.

Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disablement and retirement; rates of investment earnings and other relevant items.

Actuarial Cost Method

Sometimes called "funding method," a particular technique used by actuaries to establish the amount and incidence of the annual actuarial cost of pension plan benefits, or normal cost, and the related unfunded actuarial accrued liability. Ordinarily, the annual contribution to the plan comprises the normal cost and an amount for amortization of the unfunded actuarial accrued liability.

Actuarial Gain or (Loss)

A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions, during the period between two actuarial valuation dates, as determined in accordance with a particular actuarial cost method.

Combined Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for both Tier 1/Tier 2 and OPSRP active members. This payroll is used to calculate UAL rates.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

Employer Contribution Rate

Consists of the normal cost rate and the UAL rates, plus adjustments for other items such as side account rate offsets.

Funded Status

The actuarial value of assets expressed as a percentage of the actuarial accrued liability.

Normal Cost

The annual cost allocated to the current year, under the actuarial cost method in use. The normal cost divided by the applicable payroll is the normal cost rate.

OPSRP Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for OPSRP active members. This payroll is used to calculate OPSRP normal cost rates.

Glossary

Pre-SLGRP Liability

The sum of Pre-SLGRP Pooled Liabilities and Transition Liabilities.

Pre-SLGRP Pooled Liability

The difference between the total UAL and the UAL attributable to the SLGRP for a pool of employers that joined the SLGRP. There are currently two pre-SLGRP pools. One was created for State Agencies and Community Colleges when the SLGRP was formed. The other one was created when the Local Government Rate Pool joined the SLGRP.

Present Value

Sometimes called “actuarial present value,” the estimated cost (as of the valuation date) of a series of future payments. The present value is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Rate Collar

A methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution rate and funded status.

Required Supplementary Information (RSI)

Schedules, statistical data, and other information that are an essential part of financial reporting and should be presented with, but are not part of, the basic financial statements of a governmental entity.

Statement No. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions.

Statement No. 68 of the Governmental Accounting Standards Board (GASB 68)

The accounting standard governing a state or local governmental employer’s accounting for pensions for fiscal years beginning after June 15, 2014.

Statement No. 75 of the Governmental Accounting Standards Board (GASB 75)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

The difference between the total UAL and the UAL attributable to the SLGRP for an individual employer that joined the SLGRP or the Local Government Rate Pool.

Unfunded Accrued Liability (UAL)

The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. The UAL is divided by combined valuation payroll and an amortization factor to determine an initial pre-collar UAL rate. The final UAL rate can be adjusted by the rate collar.



Milliman
111 SW Fifth Avenue, Suite 3700
Portland, OR 97204-3654
503 227 0634

This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

September 2016

Douglas County Fire District #2/2729
Oregon Public Employees Retirement System

Dear Sir or Madam:

As part of our engagement with the Oregon Public Employees Retirement Board, we performed a system-wide actuarial valuation of the Oregon Public Employees Retirement System (“PERS” or “the System”) as of December 31, 2015. The attached report, which is an informational supplement to the system-wide report, provides you with employer-specific contribution rates that will become effective July 1, 2017. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information will be provided separately by PERS and is not included in this report.

This report reflects the System's benefit provisions in effect as of December 31, 2015. The full development of the valuation results for the OPSRP and Retiree Health Insurance Account (RHIA) programs can be found in the separate system-wide actuarial valuation report. Costs of the IAP (Individual Account Program) are not included in this or the system-wide actuarial valuation report. Further, costs of pension obligation bond payments are not included in this or the system-wide actuarial valuation report.

If you have any questions about this report, please contact Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, OPSRP general service, and OPSRP police and fire payroll,
- Information to assist you in completing GASB 45 financial reporting requirements, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- Detailed development of Tier 1/Tier 2 valuation results,
- A brief summary of methods and assumptions, and
- A brief summary of any changes in System benefit provisions.

Additional information is provided in the system-wide actuarial valuation report, which is available at www.oregon.gov/PERS/Pages/section/financial_reports/financials.aspx.



September 2016
Douglas County Fire District #2/2729

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the System's staff. This information includes, but is not limited to, System benefit provisions as defined by statute, member census data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for the System have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer a reasonable estimate of anticipated experience affecting the System.

A valuation report is only an estimate of the System's financial condition as of a single date. It can neither predict the System's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of System benefits, only the timing of System contributions. While a valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: System experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the System's funded status); and changes in System benefit provisions or applicable law. Due to the limited scope of this assignment, we did not perform an analysis of the potential range of future measurements. The Board has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in September 2015.

Some of the actuarial computations presented in this report are for purposes of determining the contribution rates effective from July 2017 to June 2019 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.



September 2016
Douglas County Fire District #2/2729

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the System. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

Additional information is provided in the system-wide actuarial valuation report.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Larrabee".

Matt Larrabee, FSA, EA, MAAA
Principal and Consulting Actuary

A handwritten signature in black ink, appearing to read "Scott Preppernau".

Scott Preppernau, FSA, EA, MAAA
Principal and Consulting Actuary



ACTUARIAL VALUATION REPORT DECEMBER 31, 2015

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

INDEPENDENT EMPLOYERS

Douglas County Fire District #2 -- #2729

September 2016

CONTENTS

Executive Summary **1**

Employer Contribution Rates 1

Accounting Information 3

Principal Valuation Results 5

 ▪ Employer 5

 ▪ Tier 1/Tier 2 6

 ▪ OPSRP 7

 ▪ Retiree Healthcare 7

Side Account Information **8**

Tier 1/Tier 2 Valuation Results **10**

Assets 10

Liabilities 11

Unfunded Accrued Liability (UAL) 13

Contribution Rate Development 15

Data **20**

Brief Summary of Actuarial Methods and Assumptions **22**

Brief Summary of Changes in Plan Provisions **24**

Glossary **25**

Executive Summary

Milliman has prepared this report for Douglas County Fire District #2 to:

- Provide summary December 31, 2015 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2017 through June 30, 2019,
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2015, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45. GASB 68 information will be provided separately by PERS and is not included in this report.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2015 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Douglas County Fire District #2.

Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2017 through June 30, 2019 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

Employer Rates Effective July 1, 2017 for Douglas County Fire District #2

	Payroll		
	Tier 1/Tier 2	OPSRP General Service	Police & Fire
Pension			
Normal cost rate	19.61%	8.02%	12.79%
Tier 1/Tier 2 UAL rate ¹	11.32%	11.32%	11.32%
OPSRP UAL rate	1.27%	1.27%	1.27%
Side account rate relief	0.00%	0.00%	0.00%
Net pension contribution rate	32.20%	20.61%	25.38%
Retiree Healthcare			
Normal cost rate	0.07%	0.00%	0.00%
UAL rate	0.43%	0.43%	0.43%
Net retiree healthcare rate	0.50%	0.43%	0.43%
Total net employer contribution rate	32.70%	21.04%	25.81%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate.

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 Biennium

The rate collar limits changes in contribution rates, but does not limit changes in rates for individual employers related to side accounts. The table below shows the possible minimum and maximum rates first effective as of July 1, 2019, which will depend on the funded status as of December 31, 2017. If the employer's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2015 is 56%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	30.93%	30.93%
Minimum 2019-2021 Rate	24.74%	18.55%
Maximum 2019-2021 Rate	37.12%	43.31%

Executive Summary

Accounting Information

Milliman is not an accounting or audit firm and cannot provide accounting advice. Milliman is not responsible for the interpretation of, or compliance with, accounting standards; citations to, and descriptions of accounting standards provided in this report are for reference purposes only. The information provided in this section is intended to assist the employer in completing its financial statements, but any accounting determination should be reviewed by your auditor.

Pension

In June 2012 the GASB issued Statement No. 68, which replaced GASB 27 and governs employer financial reporting for fiscal years beginning after June 15, 2014. The new standard replaced many of the key elements of the prior reporting requirements. Under the new rules, employers are required to record a balance sheet liability for their unfunded pension obligations. In addition, the timing and coordination of plan and employer reporting has changed under the new requirements. GASB 68 information for employers will be provided separately by PERS and is not included in this report.

Schedule of Funding Progress

Under GASB 27, the Schedule of Funding Progress for Tier 1/Tier 2 pension liabilities was reported in the Required Supplementary Information. This schedule is no longer required now that GASB 68 has replaced GASB 27. However, for additional information and the sake of historical comparison, the updated schedule is shown below for the last several valuations. For employers with side accounts, the actuarial value of assets in this Schedule includes the value of the employer's side accounts.

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (b - a)	Funded Ratio (a ÷ b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a) ÷ c)
12/31/2010	\$21,669,482	\$30,397,731	\$8,728,249	71%	\$5,660,706	154%
12/31/2011	19,613,988	31,008,691	11,394,703	63%	5,860,669	194%
12/31/2012	21,018,049	31,222,770	10,204,721	67%	5,735,311	178%
12/31/2013	23,382,518	32,170,990	8,788,472	73%	5,954,566	148%
12/31/2014	23,722,884	39,164,166	15,441,282	61%	6,042,295	256%
12/31/2015	22,565,194	40,579,043	18,013,849	56%	6,339,143	284%

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) is a cost-sharing pool under Statement No. 45 of the Governmental Accounting Standards Board (GASB 45). Consequently, each employer reports the contractually required contribution. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 was calculated as a part of this valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
	Tier 1 / Tier 2	OPSRP	
		General Service	Police & Fire
July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern employer financial reporting for retiree healthcare obligations for fiscal years beginning after June 15, 2017. In general, the changes required by GASB 75 parallel those that occurred for pension reporting when GASB 68 replaced GASB 27. Accounting information for reporting under GASB 75 will be provided separately and is not included in this report.

Executive Summary

Principal Valuation Results

A summary of principal valuation results from the current valuation and the prior valuation follows. Any changes in actuarial assumptions, methods or plan provisions between the two valuations are described later in this report. More detailed information can be found in the system-wide actuarial valuation report.

Douglas County Fire District #2

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
T1/T2 UAL	\$18,013,849	\$15,441,282
Allocated pooled OPSRP UAL	901,198	690,766
Side account	0	0
Net unfunded pension actuarial accrued liability	18,915,047	16,132,048
Combined valuation payroll	6,339,143	6,042,295
Net pension UAL as a percentage of payroll	298%	267%
Calculated side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	\$30,781	\$48,028

In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer’s combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.

Executive Summary

Principal Valuation Results (continued)

Tier 1/Tier 2

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
Normal cost	\$528,304	\$506,247
Tier 1/Tier 2 valuation payroll	2,694,558	2,567,433
Tier 1/Tier 2 pension normal cost rate	19.61%	19.72%
Tier 1/ Tier 2 Actuarial accrued liability	\$40,579,043	\$39,164,166
Actuarial asset value	22,565,194	23,722,884
Tier 1/Tier 2 Unfunded actuarial accrued liability	18,013,849	15,441,282
Tier 1/ Tier 2 Funded status	56%	61%
Combined valuation payroll	\$6,339,143	\$6,042,295
Tier 1/Tier 2 UAL as a percentage of payroll	284%	256%
Tier 1/Tier 2 UAL rate (includes Multnomah Fire District #10)	11.32%	10.77%
Tier 1/Tier 2 active members ¹	28	28
Tier 1/Tier 2 dormant members	3	2
Tier 1/Tier 2 retirees and beneficiaries	43	43

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
General service normal cost	\$342.2	\$301.3
OPSRP general service valuation payroll	4,266.9	3,720.4
General service normal cost rate	8.02%	8.10%
Police and fire normal cost	\$69.9	\$59.6
OPSRP police and fire valuation payroll	546.4	462.3
Police and fire normal cost rate	12.79%	12.90%
Actuarial accrued liability	\$3,742.5	\$3,064.1
Actuarial asset value	2,389.1	2,024.6
Unfunded actuarial accrued liability	1,353.5	1,039.5
Funded status	64%	66%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	14%	11%
UAL rate	1.27%	1.01%

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
RHIA		
Normal cost	\$3.3	\$3.5
Tier 1 / Tier 2 valuation payroll	4,730.8	4,933.1
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	\$465.6	\$468.4
Actuarial asset value	419.3	395.9
Unfunded actuarial accrued liability	46.3	72.5
Funded status	90%	85%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	0%	1%
UAL rate	0.43%	0.43%

Side Account Information

Reconciliation of Side Accounts

The following table reconciles the total side account from the beginning of the year to the end of the year. Side account transfers were calculated by PERS and made on a monthly basis. The amount of these transfers is shown in the table below.

All information in this table has been provided by PERS.

	New	Continuing	Total
1. Side account as of December 31, 2014	N/A		
2. Deposits made during 2015		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2015			
5. Side account earnings during 2015			
6. Side account as of December 31, 2015 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2015	December 31, 2014
Side account 1	\$0	\$0
Side account 2	0	0
Side account 3	0	0
Total	\$0	\$0

Development of Side Account Rate

The rate relief attributable to an employer's side account is determined by amortizing the side account balance on the valuation date over a fixed period, and expressing the result as a percentage of combined valuation payroll. For side accounts established prior to December 31, 2009, the fixed period ends December 31, 2027. For side accounts established at a later date, the fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2015	December 31, 2014
1. Total side account	\$0	\$0
2. Combined valuation payroll	6,339,143	6,042,295
3. Average Amortization factor	9.504	10.118
4. Total side account rate (-1. ÷ 2. ÷ 3.)¹	0.00%	0.00%

¹ For employers with more than one side account, the Total Side Account Rate is determined by calculating the rate on each side account separately and adding the rates together.

Tier 1/Tier 2 Valuation Results

Assets

A summary of the market value of pension assets, and reconciliation from the prior year are shown below.

Summary of Market Value of Tier 1/Tier 2 Pension Assets

	December 31, 2015	December 31, 2014
1. Member reserves	\$2,502,513	\$2,429,731
2. Employer reserves	7,585,895	7,456,448
3. Benefits in force reserve	12,476,787	13,836,705
4. Total market value of assets (1. + 2. + 3.)	\$22,565,194	\$23,722,884

The market value of member and employer reserves is provided by PERS. The benefits in force reserve provided by PERS is allocated each year among employers in proportion to their liabilities for retired members and beneficiaries.

Reconciliation of Tier 1/Tier 2 Pension Assets

	December 31, 2014 to December 31, 2015
1. Market value of assets at beginning of year	\$23,722,884
2. Regular employer contributions	637,666
3. Benefit payments and expense	(2,268,919)
4. Adjustments ¹	(23,725)
5. Interest credited	497,289
6. Total transferred from side accounts	0
7. Market value of assets at end of year (1. + 2. + 3. + 4. + 5. + 6.)	\$22,565,194

¹ Note the adjustment item above includes a reallocation of the benefits in force reserve, transfers to Multnomah Fire District #10, and other adjustments made by PERS.

Tier 1/Tier 2 Valuation Results

Liabilities

Normal Cost

The normal cost represents the value of benefits assigned to the next year of service by the actuarial cost method. If all actuarial assumptions are met, the normal cost represents the amount that would need to be contributed each year to fund plan benefits. Amounts shown below include assumed administrative expenses, which are allocated pro-rata based on normal cost.

Summary of Normal Cost by Tier/Member Classification

	December 31, 2015	December 31, 2014
Tier 1 Police & Fire	\$286,659	\$277,685
Tier 1 General Service	19,614	18,298
Tier 2 Police & Fire	217,009	205,869
Tier 2 General Service	5,022	4,395
Total	\$528,304	\$506,247

Change in Tier 1/Tier 2 Normal Cost

The following table shows the impact of the assumption, method, and plan changes on normal cost as of December 31, 2015.

	Before Changes	After Changes	Net Change
Normal Cost	\$528,304	\$528,304	\$0

Tier 1/Tier 2 Valuation Results

Liabilities

Actuarial Accrued Liability

The actuarial accrued liability represents the value of benefits allocated to service performed before the valuation date by the actuarial cost method. If all actuarial assumptions are met, the actuarial accrued liability represents the amount of assets that would need to be accumulated as of the valuation date to provide for the portion of benefits allocated to service already performed.

Summary of Actuarial Accrued Liability by Tier/Member Classification

	December 31, 2015	December 31, 2014
Active Members		
▪ Tier 1 Police & Fire	\$9,622,927	\$8,924,189
▪ Tier 1 General Service	436,044	349,879
▪ Tier 2 Police & Fire	3,491,239	2,971,762
▪ Tier 2 General Service	74,827	64,693
▪ Total Active Members	\$13,625,037	\$12,310,523
Dormant Members	14,235	10,778
Retired Members and Beneficiaries	26,939,771	26,842,865
Total Actuarial Accrued Liability	\$40,579,043	\$39,164,166

Change in Tier 1/Tier 2 Actuarial Accrued Liability

The following table shows the impact of the assumption, method, and plan changes on the actuarial accrued liability as of December 31, 2015.

	Before Changes	After Changes	Net Change
Actuarial Accrued Liability	\$40,579,043	\$40,579,043	\$0

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Summary of UAL

The UAL represents the difference between the assets accumulated and the liability attributed to prior years of service by the cost method.

	December 31, 2015	December 31, 2014
1. Actuarial accrued liability	\$40,579,043	\$39,164,166
2. Actuarial value of assets	22,565,194	23,722,884
3. Unfunded accrued liability (1. – 2.)	18,013,849	15,441,282
4. Funded percentage (2. ÷ 1.)	56%	61%
5. Combined valuation payroll	\$6,339,143	\$6,042,295
6. Unfunded accrued liability as % of combined valuation payroll (3. ÷ 5.)	284%	256%

Reconciliation of UAL Bases

Beginning with the December 31, 2013 actuarial valuation, each odd-year valuation establishes a 20-year closed-period amortization schedule for outstanding Tier 1/Tier 2 UAL amounts. Amortization schedules are calculated based on the total Tier 1/Tier 2 UAL as of that valuation date less the remaining unamortized balance of previously established Tier 1/Tier 2 UAL bases.

Amortization Base	UAL December 31, 2014	Payment	Interest	UAL December 31, 2015	Next Year's Payment
December 31, 2013	\$8,807,224	\$659,717	\$634,185	\$8,781,692	\$682,816
December 31, 2015	N/A	N/A	N/A	\$9,232,157	\$668,029
Total				\$18,013,849	\$1,350,845

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Actuarial Gain or Loss since Prior Valuation

The system-wide actuarial valuation report contains a detailed analysis of gains and losses since the last valuation. The table below shows the gain or loss for the individual employer.

1. Expected actuarial accrued liability	
a. Actuarial accrued liability at December 31, 2014	\$39,164,166
b. Normal cost at December 31, 2014 (excluding assumed expenses)	484,046
c. Benefit payments during 2015	(2,251,394)
d. Interest at 7.50% to December 31, 2015	2,871,037
e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)	40,267,855
f. Change in actuarial accrued liability due to assumption, method, and plan changes	0
g. Expected actuarial accrued liability at December 31, 2015 (e. + f.)	40,267,855
2. Actuarial accrued liability at December 31, 2015	40,579,043
3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)	(311,188)
4. Expected actuarial value of assets	
a. Actuarial value of assets at December 31, 2014	23,722,884
b. Contributions for 2015 ¹	637,666
c. Benefit payments and expenses during 2015	(2,268,919)
d. Interest at 7.50% to December 31, 2015	1,718,044
e. Expected actuarial value of assets at December 31, 2015 (a. + b. + c. + d.)	23,809,674
5. Actuarial value of assets at December 31, 2015	22,565,194
6. Gain/(loss) on actuarial value of assets (5. - 4.e.)	(1,244,480)
7. Total actuarial gain/(loss) (3. + 6.)	(\$1,555,668)

Unfunded Accrued Liability Reconciliation

A reconciliation of the Tier 1/Tier 2 UAL from December 31, 2014 is provided below.

1. UAL at December 31, 2014	\$15,441,282
2. Expected increase	1,016,899
3. Liability (gain)/loss	311,188
4. Asset (gain)/loss	1,244,480
5. Change due to changes in assumptions, methods, and plan provisions	0
6. UAL at December 31, 2015 (1. + 2. + 3. + 4. + 5.)	\$18,013,849

¹ Includes rate relief from side accounts.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Normal Cost Rate

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

Development of Tier 1/Tier 2 Normal Cost Rate

	December 31, 2015			December 31, 2014		
	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate
Tier 1 Police & Fire	\$286,659	\$1,339,956	21.39%	\$277,685	\$1,294,426	21.45%
Tier 1 General Service	19,614	171,743	11.42%	18,298	156,584	11.69%
Tier 2 Police & Fire	217,009	1,138,016	19.07%	205,869	1,078,463	19.09%
Tier 2 General Service	5,022	44,843	11.20%	4,395	37,960	11.58%
Total	\$528,304	\$2,694,558	19.61%	\$506,247	\$2,567,433	19.72%

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Development of Tier 1/Tier 2 UAL Rates

The UAL rate is determined by calculating the next year's scheduled payment to the UAL as a percentage of combined valuation payroll.

	December 31, 2015	December 31, 2014
1. Total Tier 1/Tier 2 UAL	\$18,013,849	\$15,441,282
2. Next year's Tier 1/Tier 2 UAL payment	1,350,845	1,139,750
3. Combined valuation payroll	6,339,143	6,042,295
4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)	21.31%	18.86%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	19.61%	19.72%
b. Tier 1/Tier 2 UAL rate	21.31%	18.86%
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate (a. + b. + c.)	41.07%	38.73%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Adjustments Due to Rate Collar and Minimum Rate Requirements

Employer contribution rates are generally limited to change by no more than the greater of 3 percent of payroll or 20 percent from the current contribution rate. However, if the funded percentage excluding side accounts is below 60 percent or above 140 percent the rate collar doubles in size. If the funded percentage excluding side accounts is between 60 and 70 percent or 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

The table below shows the current contribution rate for the period from July 1, 2015 through June 30, 2017, develops the maximum and minimum contribution rates effective July 1, 2017 based on the collar, and calculates the net adjustment due to the collar and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

1. Current net Tier 1/Tier 2 pension contribution rate		22.09%
2. Employer contribution rate attributable to side accounts		0.00%
3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)		22.09%
4. Size of rate collar		
a. 20% of current employer contribution rate (20% x 3.)		4.42%
b. Preliminary size of rate collar (maximum of 3% or a.)		4.42%
c. Funded percentage		56%
d. Size of rate collar (If c. < 60% or c. > 140%, 2 x b. If c. is 70%-130%, b. Otherwise, a graded rate between b. and 2 x b.)		8.84%
5. July 1, 2017 minimum employer contribution rate	(3. – 4.d. but not < 0%)	13.25%
6. July 1, 2017 maximum employer contribution rate	(3. + 4.d.)	30.93%
7. July 1, 2017 total pension rate, before adjustment		41.07%
8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)		(10.14%)
9. July 1, 2017 Tier 1/Tier 2 UAL rate, before collar		21.31%
10. July 1, 2017 Tier 1/Tier 2 UAL rate, after collar	(8. + 9.)	11.17%
11. July 1, 2017 Tier 1/Tier 2 pension rate, after collar		30.93%
12. Tier 1/Tier 2 retiree healthcare rate		0.50%
13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)		0.00%
14. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment		19.61%
15. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)		19.61%
16. July 1, 2017 Tier 1/Tier 2 pension rate, after minimum adjustment	(11. + 13.)	30.93%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Post-Rate Collar)

The table below summarizes the employer's pension contribution rate for Tier 1 /Tier 2 after adjustments for the rate collar and the 6 percent of payroll minimum employer contribution rate.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	19.61%	19.72%
b. Tier 1/Tier 2 UAL rate	11.17%	10.62%
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate <i>(a. + b. + c., minimum of 5.50%)</i>	30.93%	30.49%

Data

Demographic Information

Employer Valuation Payroll

	General Service	Police & Fire	Total
Tier 1	\$171,743	\$1,339,956	\$1,511,699
Tier 2	44,843	1,138,016	1,182,859
Tier 1/Tier 2 valuation payroll	216,586	2,477,972	2,694,558
OPSRP valuation payroll	1,893,235	1,751,350	3,644,585
Combined valuation payroll	\$2,109,821	\$4,229,322	\$6,339,143

Employer Member Census

	December 31							
	2015				2014			
	Tier 1	Tier 2	OPSRP	Total	Tier 1	Tier 2	OPSRP	Total
Active Members ¹								
General Service	2	1	36	39	2	1	31	34
Police & Fire	13	12	19	44	13	12	22	47
Total	15	13	55	83	15	13	53	81
Active Members with previous service segments with the employer								
General Service	1	1	N/A	2	0	2	N/A	2
Police & Fire	4	3	N/A	7	4	3	N/A	7
Total	5	4	N/A	9	4	5	N/A	9
Dormant Members								
General Service	0	2	5	7	0	1	4	5
Police & Fire	1	0	0	1	1	0	0	1
Total	1	2	5	8	1	1	4	6
Retired Members and Beneficiaries								
General Service	1	1	2	4	1	1	1	3
Police & Fire	40	1	0	41	41	0	0	41
Total	41	2	2	45	42	1	1	44
Grand Total Number of Members	62	21	62	145	62	20	58	140

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Data

Demographic Information (continued)

Employer Tier 1/Tier 2 Active Members as of December 31, 2015

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
<20										
20-24										
25-29										
30-34										
35-39			3	1						4
40-44				3						3
45-49			1	2	3	1				7
50-54			1	2	4	3				10
55-59					2					2
60-64			1		1					2
65-69										
70-74										
75+										
Total	0	0	6	8	10	4	0	0	0	28

Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2015

Dormant Members			Retired Members and Beneficiaries		
Age	Count	Average Deferred Monthly Benefit	Age	Count	Average Monthly Benefit
<20			<45		
20-24			45-49		
25-29			50-54	1	3,487
30-34			55-59	11	4,020
35-39			60-64	10	4,939
40-44			65-69	7	4,191
45-49	2	158	70-74	7	2,457
50-54			75-79	6	2,372
55-59			80-84	1	1,991
60-64			85-89		
65-69			90-94		
70-74	1	69	95-99		
75+			100+		
Total	3	128	Total	43	3,717

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2015 valuation can be found in the system-wide actuarial valuation report.

Actuarial Methods and Valuation Procedures

A brief summary of the methods used in this valuation is shown below:

<i>Actuarial cost method</i>	Entry Age Normal.
<i>Amortization Method</i>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. Gains and losses between subsequent odd-year valuations will be amortized as a level percentage of projected combined valuation payroll over a closed 20 year period.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.</p>

Economic Assumptions

A brief summary of the key economic assumptions used in this valuation is shown below:

<i>Net investment return</i>	7.50% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.50% compounded annually on members' regular account balances.</p> <p>7.50% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 6.3% in 2016 to 4.4% in 2094.
<i>Administrative Expenses</i>	<p>\$5.5 million added to OPSRP normal cost.</p> <p>\$33.0 million added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2014 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

There were no changes in actuarial methods and allocation procedures since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA actuarial methods and allocation procedures is provided as part of the system-wide valuation report.

Changes in Assumptions

There were no changes in assumptions since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA assumptions is provided as part of the system-wide valuation report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Glossary

Actuarial Accrued Liability

The portion of the present value of prospective benefits allocated to service and compensation before the valuation date in accordance with the actuarial cost method.

Actuarial Asset Value

The value of assets used in calculating the required contributions. The actuarial asset value may be equal to the fair market value of assets, or it may spread the recognition of certain investment gains or losses over a period of years in accordance with an asset valuation method.

Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disablement and retirement; rates of investment earnings and other relevant items.

Actuarial Cost Method

Sometimes called "funding method," a particular technique used by actuaries to establish the amount and incidence of the annual actuarial cost of pension plan benefits, or normal cost, and the related unfunded actuarial accrued liability. Ordinarily, the annual contribution to the plan comprises the normal cost and an amount for amortization of the unfunded actuarial accrued liability.

Actuarial Gain or (Loss)

A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions, during the period between two actuarial valuation dates, as determined in accordance with a particular actuarial cost method.

Combined Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for both Tier 1/Tier 2 and OPSRP active members. This payroll is used to calculate UAL rates.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

Employer Contribution Rate

Consists of the normal cost rate and the UAL rates, plus adjustments for other items such as side account rate offsets.

Funded Status

The actuarial value of assets expressed as a percentage of the actuarial accrued liability.

Normal Cost

The annual cost allocated to the current year, under the actuarial cost method in use. The normal cost divided by the applicable payroll is the normal cost rate.

OPSRP Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for OPSRP active members. This payroll is used to calculate OPSRP normal cost rates.

Glossary

Pre-SLGRP Liability

The sum of Pre-SLGRP Pooled Liabilities and Transition Liabilities.

Pre-SLGRP Pooled Liability

The difference between the total UAL and the UAL attributable to the SLGRP for a pool of employers that joined the SLGRP. There are currently two pre-SLGRP pools. One was created for State Agencies and Community Colleges when the SLGRP was formed. The other one was created when the Local Government Rate Pool joined the SLGRP.

Present Value

Sometimes called “actuarial present value,” the estimated cost (as of the valuation date) of a series of future payments. The present value is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Rate Collar

A methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution rate and funded status.

Required Supplementary Information (RSI)

Schedules, statistical data, and other information that are an essential part of financial reporting and should be presented with, but are not part of, the basic financial statements of a governmental entity.

Statement No. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions.

Statement No. 68 of the Governmental Accounting Standards Board (GASB 68)

The accounting standard governing a state or local governmental employer’s accounting for pensions for fiscal years beginning after June 15, 2014.

Statement No. 75 of the Governmental Accounting Standards Board (GASB 75)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

The difference between the total UAL and the UAL attributable to the SLGRP for an individual employer that joined the SLGRP or the Local Government Rate Pool.

Unfunded Accrued Liability (UAL)

The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. The UAL is divided by combined valuation payroll and an amortization factor to determine an initial pre-collar UAL rate. The final UAL rate can be adjusted by the rate collar.



Milliman
111 SW Fifth Avenue, Suite 3700
Portland, OR 97204-3654
503 227 0634

This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

September 2016

Douglas County/2003
Oregon Public Employees Retirement System

Dear Sir or Madam:

As part of our engagement with the Oregon Public Employees Retirement Board, we performed a system-wide actuarial valuation of the Oregon Public Employees Retirement System (“PERS” or “the System”) as of December 31, 2015. The attached report, which is an informational supplement to the system-wide report, provides you with employer-specific contribution rates that will become effective July 1, 2017. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information will be provided separately by PERS and is not included in this report.

This report reflects the System's benefit provisions in effect as of December 31, 2015. The full development of the valuation results for the OPSRP and Retiree Health Insurance Account (RHIA) programs can be found in the separate system-wide actuarial valuation report. Costs of the IAP (Individual Account Program) are not included in this or the system-wide actuarial valuation report. Further, costs of pension obligation bond payments are not included in this or the system-wide actuarial valuation report.

If you have any questions about this report, please contact Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, OPSRP general service, and OPSRP police and fire payroll,
- Information to assist you in completing GASB 45 financial reporting requirements, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- Detailed development of Tier 1/Tier 2 valuation results,
- A brief summary of methods and assumptions, and
- A brief summary of any changes in System benefit provisions.

Additional information is provided in the system-wide actuarial valuation report, which is available at www.oregon.gov/PERS/Pages/section/financial_reports/financials.aspx.



September 2016
Douglas County/2003

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the System's staff. This information includes, but is not limited to, System benefit provisions as defined by statute, member census data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for the System have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer a reasonable estimate of anticipated experience affecting the System.

A valuation report is only an estimate of the System's financial condition as of a single date. It can neither predict the System's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of System benefits, only the timing of System contributions. While a valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: System experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the System's funded status); and changes in System benefit provisions or applicable law. Due to the limited scope of this assignment, we did not perform an analysis of the potential range of future measurements. The Board has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in September 2015.

Some of the actuarial computations presented in this report are for purposes of determining the contribution rates effective from July 2017 to June 2019 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.



September 2016
Douglas County/2003

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the System. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

Additional information is provided in the system-wide actuarial valuation report.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Larrabee".

Matt Larrabee, FSA, EA, MAAA
Principal and Consulting Actuary

A handwritten signature in black ink, appearing to read "Scott Preppernau".

Scott Preppernau, FSA, EA, MAAA
Principal and Consulting Actuary



ACTUARIAL VALUATION REPORT DECEMBER 31, 2015

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

INDEPENDENT EMPLOYERS

Douglas County -- #2003

September 2016

This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

CONTENTS

Executive Summary **1**

Employer Contribution Rates 1

Accounting Information 3

Principal Valuation Results 5

 ▪ Employer 5

 ▪ Tier 1/Tier 2 6

 ▪ OPSRP 7

 ▪ Retiree Healthcare 7

Side Account Information **8**

Tier 1/Tier 2 Valuation Results **10**

Assets 10

Liabilities 11

Unfunded Accrued Liability (UAL) 13

Contribution Rate Development 15

Data **20**

Brief Summary of Actuarial Methods and Assumptions **22**

Brief Summary of Changes in Plan Provisions **24**

Glossary **25**

Executive Summary

Milliman has prepared this report for Douglas County to:

- Provide summary December 31, 2015 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2017 through June 30, 2019,
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2015, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45. GASB 68 information will be provided separately by PERS and is not included in this report.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2015 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Douglas County.

Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2017 through June 30, 2019 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

Employer Rates Effective July 1, 2017 for Douglas County

	Payroll		
	Tier 1/Tier 2	OPSRP General Service	OPSRP Police & Fire
Pension			
Normal cost rate	19.58%	8.02%	12.79%
Tier 1/Tier 2 UAL rate ¹	10.83%	10.83%	10.83%
OPSRP UAL rate	1.27%	1.27%	1.27%
Side account rate relief	0.00%	0.00%	0.00%
Net pension contribution rate	31.68%	20.12%	24.89%
Retiree Healthcare			
Normal cost rate	0.07%	0.00%	0.00%
UAL rate	0.43%	0.43%	0.43%
Net retiree healthcare rate	0.50%	0.43%	0.43%
Total net employer contribution rate	32.18%	20.55%	25.32%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate.

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 Biennium

The rate collar limits changes in contribution rates, but does not limit changes in rates for individual employers related to side accounts. The table below shows the possible minimum and maximum rates first effective as of July 1, 2019, which will depend on the funded status as of December 31, 2017. If the employer's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2015 is 72%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	30.41%	30.41%
Minimum 2019-2021 Rate	24.33%	18.25%
Maximum 2019-2021 Rate	36.49%	42.57%

Executive Summary

Accounting Information

Milliman is not an accounting or audit firm and cannot provide accounting advice. Milliman is not responsible for the interpretation of, or compliance with, accounting standards; citations to, and descriptions of accounting standards provided in this report are for reference purposes only. The information provided in this section is intended to assist the employer in completing its financial statements, but any accounting determination should be reviewed by your auditor.

Pension

In June 2012 the GASB issued Statement No. 68, which replaced GASB 27 and governs employer financial reporting for fiscal years beginning after June 15, 2014. The new standard replaced many of the key elements of the prior reporting requirements. Under the new rules, employers are required to record a balance sheet liability for their unfunded pension obligations. In addition, the timing and coordination of plan and employer reporting has changed under the new requirements. GASB 68 information for employers will be provided separately by PERS and is not included in this report.

Schedule of Funding Progress

Under GASB 27, the Schedule of Funding Progress for Tier 1/Tier 2 pension liabilities was reported in the Required Supplementary Information. This schedule is no longer required now that GASB 68 has replaced GASB 27. However, for additional information and the sake of historical comparison, the updated schedule is shown below for the last several valuations. For employers with side accounts, the actuarial value of assets in this Schedule includes the value of the employer's side accounts.

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (b - a)	Funded Ratio (a ÷ b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a) ÷ c)
12/31/2010	\$237,499,259	\$305,065,495	\$67,566,236	78%	\$31,655,167	213%
12/31/2011	228,167,624	308,521,151	80,353,527	74%	29,880,985	269%
12/31/2012	248,078,897	298,085,583	50,006,686	83%	30,384,722	165%
12/31/2013	270,412,262	306,548,858	36,136,596	88%	30,015,440	120%
12/31/2014	272,545,357	352,700,431	80,155,074	77%	24,683,050	325%
12/31/2015	262,352,745	363,015,387	100,662,642	72%	24,936,214	404%

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) is a cost-sharing pool under Statement No. 45 of the Governmental Accounting Standards Board (GASB 45). Consequently, each employer reports the contractually required contribution. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 was calculated as a part of this valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
	Tier 1 / Tier 2	OPSRP	
		General Service	Police & Fire
July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern employer financial reporting for retiree healthcare obligations for fiscal years beginning after June 15, 2017. In general, the changes required by GASB 75 parallel those that occurred for pension reporting when GASB 68 replaced GASB 27. Accounting information for reporting under GASB 75 will be provided separately and is not included in this report.

Executive Summary

Principal Valuation Results

A summary of principal valuation results from the current valuation and the prior valuation follows. Any changes in actuarial assumptions, methods or plan provisions between the two valuations are described later in this report. More detailed information can be found in the system-wide actuarial valuation report.

Douglas County

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
T1/T2 UAL	\$100,662,642	\$80,155,074
Allocated pooled OPSRP UAL	3,545,031	2,821,810
Side account	0	0
Net unfunded pension actuarial accrued liability	104,207,673	82,976,884
Combined valuation payroll	24,936,214	24,683,050
Net pension UAL as a percentage of payroll	418%	336%
Calculated side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	\$121,082	\$196,195

In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer's combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.

Executive Summary

Principal Valuation Results (continued)

Tier 1/Tier 2

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
Normal cost	\$2,431,726	\$2,682,252
Tier 1/Tier 2 valuation payroll	12,420,710	13,576,339
Tier 1/Tier 2 pension normal cost rate	19.58%	19.76%
Tier 1/ Tier 2 Actuarial accrued liability	\$363,015,387	\$352,700,431
Actuarial asset value	262,352,745	272,545,357
Tier 1/Tier 2 Unfunded actuarial accrued liability	100,662,642	80,155,074
Tier 1/ Tier 2 Funded status	72%	77%
Combined valuation payroll	\$24,936,214	\$24,683,050
Tier 1/Tier 2 UAL as a percentage of payroll	404%	325%
Tier 1/Tier 2 UAL rate (includes Multnomah Fire District #10)	10.83%	10.65%
Tier 1/Tier 2 active members ¹	220	258
Tier 1/Tier 2 dormant members	231	246
Tier 1/Tier 2 retirees and beneficiaries	1,176	1,133

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
General service normal cost	\$342.2	\$301.3
OPSRP general service valuation payroll	4,266.9	3,720.4
General service normal cost rate	8.02%	8.10%
Police and fire normal cost	\$69.9	\$59.6
OPSRP police and fire valuation payroll	546.4	462.3
Police and fire normal cost rate	12.79%	12.90%
Actuarial accrued liability	\$3,742.5	\$3,064.1
Actuarial asset value	2,389.1	2,024.6
Unfunded actuarial accrued liability	1,353.5	1,039.5
Funded status	64%	66%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	14%	11%
UAL rate	1.27%	1.01%

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
RHIA		
Normal cost	\$3.3	\$3.5
Tier 1 / Tier 2 valuation payroll	4,730.8	4,933.1
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	\$465.6	\$468.4
Actuarial asset value	419.3	395.9
Unfunded actuarial accrued liability	46.3	72.5
Funded status	90%	85%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	0%	1%
UAL rate	0.43%	0.43%

Side Account Information

Reconciliation of Side Accounts

The following table reconciles the total side account from the beginning of the year to the end of the year. Side account transfers were calculated by PERS and made on a monthly basis. The amount of these transfers is shown in the table below.

All information in this table has been provided by PERS.

	New	Continuing	Total
1. Side account as of December 31, 2014	N/A		
2. Deposits made during 2015		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2015			
5. Side account earnings during 2015			
6. Side account as of December 31, 2015 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2015	December 31, 2014
Side account 1	\$0	\$0
Side account 2	0	0
Side account 3	0	0
Total	\$0	\$0

Development of Side Account Rate

The rate relief attributable to an employer's side account is determined by amortizing the side account balance on the valuation date over a fixed period, and expressing the result as a percentage of combined valuation payroll. For side accounts established prior to December 31, 2009, the fixed period ends December 31, 2027. For side accounts established at a later date, the fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2015	December 31, 2014
1. Total side account	\$0	\$0
2. Combined valuation payroll	24,936,214	24,683,050
3. Average Amortization factor	9.504	10.118
4. Total side account rate (-1. ÷ 2. ÷ 3.)¹	0.00%	0.00%

¹ For employers with more than one side account, the Total Side Account Rate is determined by calculating the rate on each side account separately and adding the rates together.

Tier 1/Tier 2 Valuation Results

Assets

A summary of the market value of pension assets, and reconciliation from the prior year are shown below.

Summary of Market Value of Tier 1/Tier 2 Pension Assets

	December 31, 2015	December 31, 2014
1. Member reserves	\$33,945,661	\$36,579,797
2. Employer reserves	108,521,490	110,198,379
3. Benefits in force reserve	119,885,594	125,767,181
4. Total market value of assets (1. + 2. + 3.)	\$262,352,745	\$272,545,357

The market value of member and employer reserves is provided by PERS. The benefits in force reserve provided by PERS is allocated each year among employers in proportion to their liabilities for retired members and beneficiaries.

Reconciliation of Tier 1/Tier 2 Pension Assets

	December 31, 2014 to December 31, 2015
1. Market value of assets at beginning of year	\$272,545,357
2. Regular employer contributions	4,358,988
3. Benefit payments and expense	(21,801,346)
4. Adjustments ¹	722,895
5. Interest credited	6,526,851
6. Total transferred from side accounts	0
7. Market value of assets at end of year (1. + 2. + 3. + 4. + 5. + 6.)	\$262,352,745

¹ Note the adjustment item above includes a reallocation of the benefits in force reserve, transfers to Multnomah Fire District #10, and other adjustments made by PERS.

Tier 1/Tier 2 Valuation Results

Liabilities

Normal Cost

The normal cost represents the value of benefits assigned to the next year of service by the actuarial cost method. If all actuarial assumptions are met, the normal cost represents the amount that would need to be contributed each year to fund plan benefits. Amounts shown below include assumed administrative expenses, which are allocated pro-rata based on normal cost.

Summary of Normal Cost by Tier/Member Classification

	December 31, 2015	December 31, 2014
Tier 1 Police & Fire	\$372,973	\$424,299
Tier 1 General Service	1,199,756	1,346,937
Tier 2 Police & Fire	388,993	371,436
Tier 2 General Service	470,004	539,580
Total	\$2,431,726	\$2,682,252

Change in Tier 1/Tier 2 Normal Cost

The following table shows the impact of the assumption, method, and plan changes on normal cost as of December 31, 2015.

	Before Changes	After Changes	Net Change
Normal Cost	\$2,431,726	\$2,431,726	\$0

Tier 1/Tier 2 Valuation Results

Liabilities

Actuarial Accrued Liability

The actuarial accrued liability represents the value of benefits allocated to service performed before the valuation date by the actuarial cost method. If all actuarial assumptions are met, the actuarial accrued liability represents the amount of assets that would need to be accumulated as of the valuation date to provide for the portion of benefits allocated to service already performed.

Summary of Actuarial Accrued Liability by Tier/Member Classification

	December 31, 2015	December 31, 2014
Active Members		
▪ Tier 1 Police & Fire	\$13,548,529	\$14,194,492
▪ Tier 1 General Service	45,080,078	48,389,897
▪ Tier 2 Police & Fire	7,973,386	6,789,137
▪ Tier 2 General Service	13,017,635	13,247,841
▪ Total Active Members	\$79,619,628	\$82,621,367
Dormant Members	24,539,809	26,093,849
Retired Members and Beneficiaries	258,855,950	243,985,215
Total Actuarial Accrued Liability	\$363,015,387	\$352,700,431

Change in Tier 1/Tier 2 Actuarial Accrued Liability

The following table shows the impact of the assumption, method, and plan changes on the actuarial accrued liability as of December 31, 2015.

	Before Changes	After Changes	Net Change
Actuarial Accrued Liability	\$363,015,387	\$363,015,387	\$0

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Summary of UAL

The UAL represents the difference between the assets accumulated and the liability attributed to prior years of service by the cost method.

	December 31, 2015	December 31, 2014
1. Actuarial accrued liability	\$363,015,387	\$352,700,431
2. Actuarial value of assets	262,352,745	272,545,357
3. Unfunded accrued liability (1. – 2.)	100,662,642	80,155,074
4. Funded percentage (2. ÷ 1.)	72%	77%
5. Combined valuation payroll	\$24,936,214	\$24,683,050
6. Unfunded accrued liability as % of combined valuation payroll (3. ÷ 5.)	404%	325%

Reconciliation of UAL Bases

Beginning with the December 31, 2013 actuarial valuation, each odd-year valuation establishes a 20-year closed-period amortization schedule for outstanding Tier 1/Tier 2 UAL amounts. Amortization schedules are calculated based on the total Tier 1/Tier 2 UAL as of that valuation date less the remaining unamortized balance of previously established Tier 1/Tier 2 UAL bases.

Amortization Base	UAL December 31, 2014	Payment	Interest	UAL December 31, 2015	Next Year's Payment
December 31, 2013	\$36,213,702	\$2,712,637	\$2,607,655	\$36,108,720	\$2,807,614
December 31, 2015	N/A	N/A	N/A	\$64,553,922	\$4,671,051
Total				\$100,662,642	\$7,478,665

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Actuarial Gain or Loss since Prior Valuation

The system-wide actuarial valuation report contains a detailed analysis of gains and losses since the last valuation. The table below shows the gain or loss for the individual employer.

1. Expected actuarial accrued liability	
a. Actuarial accrued liability at December 31, 2014	\$352,700,431
b. Normal cost at December 31, 2014 (excluding assumed expenses)	2,565,906
c. Benefit payments during 2015	(21,632,955)
d. Interest at 7.50% to December 31, 2015	25,737,518
e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)	359,370,900
f. Change in actuarial accrued liability due to assumption, method, and plan changes	0
g. Expected actuarial accrued liability at December 31, 2015 (e. + f.)	359,370,900
2. Actuarial accrued liability at December 31, 2015	363,015,387
3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)	(3,644,487)
4. Expected actuarial value of assets	
a. Actuarial value of assets at December 31, 2014	272,545,357
b. Contributions for 2015 ¹	4,358,988
c. Benefit payments and expenses during 2015	(21,801,346)
d. Interest at 7.50% to December 31, 2015	19,786,813
e. Expected actuarial value of assets at December 31, 2015 (a. + b. + c. + d.)	274,889,812
5. Actuarial value of assets at December 31, 2015	262,352,745
6. Gain/(loss) on actuarial value of assets (5. - 4.e.)	(12,537,067)
7. Total actuarial gain/(loss) (3. + 6.)	(\$16,181,554)

Unfunded Accrued Liability Reconciliation

A reconciliation of the Tier 1/Tier 2 UAL from December 31, 2014 is provided below.

1. UAL at December 31, 2014	\$80,155,074
2. Expected increase	4,326,014
3. Liability (gain)/loss	3,644,487
4. Asset (gain)/loss	12,537,067
5. Change due to changes in assumptions, methods, and plan provisions	0
6. UAL at December 31, 2015 (1. + 2. + 3. + 4. + 5.)	\$100,662,642

¹ Includes rate relief from side accounts.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Normal Cost Rate

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

Development of Tier 1/Tier 2 Normal Cost Rate

	December 31, 2015			December 31, 2014		
	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate
Tier 1 Police & Fire	\$372,973	\$1,649,296	22.61%	\$424,299	\$1,867,123	22.72%
Tier 1 General Service	1,199,756	5,094,773	23.55%	1,346,937	5,734,488	23.49%
Tier 2 Police & Fire	388,993	2,012,550	19.33%	371,436	1,878,388	19.77%
Tier 2 General Service	470,004	3,664,091	12.83%	539,580	4,096,340	13.17%
Total	\$2,431,726	\$12,420,710	19.58%	\$2,682,252	\$13,576,339	19.76%

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Development of Tier 1/Tier 2 UAL Rates

The UAL rate is determined by calculating the next year's scheduled payment to the UAL as a percentage of combined valuation payroll.

	December 31, 2015	December 31, 2014
1. Total Tier 1/Tier 2 UAL	\$100,662,642	\$80,155,074
2. Next year's Tier 1/Tier 2 UAL payment	7,478,665	5,892,186
3. Combined valuation payroll	24,936,214	24,683,050
4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)	29.99%	23.87%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	19.58%	19.76%
b. Tier 1/Tier 2 UAL rate	29.99%	23.87%
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate (a. + b. + c.)	49.72%	43.78%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Adjustments Due to Rate Collar and Minimum Rate Requirements

Employer contribution rates are generally limited to change by no more than the greater of 3 percent of payroll or 20 percent from the current contribution rate. However, if the funded percentage excluding side accounts is below 60 percent or above 140 percent the rate collar doubles in size. If the funded percentage excluding side accounts is between 60 and 70 percent or 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

The table below shows the current contribution rate for the period from July 1, 2015 through June 30, 2017, develops the maximum and minimum contribution rates effective July 1, 2017 based on the collar, and calculates the net adjustment due to the collar and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

1. Current net Tier 1/Tier 2 pension contribution rate		25.34%
2. Employer contribution rate attributable to side accounts		0.00%
3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)		25.34%
4. Size of rate collar		
a. 20% of current employer contribution rate (20% x 3.)		5.07%
b. Preliminary size of rate collar (maximum of 3% or a.)		5.07%
c. Funded percentage		72%
d. Size of rate collar (If c. < 60% or c. > 140%, 2 x b. If c. is 70%-130%, b. Otherwise, a graded rate between b. and 2 x b.)		5.07%
5. July 1, 2017 minimum employer contribution rate	(3. – 4.d. but not < 0%)	20.27%
6. July 1, 2017 maximum employer contribution rate	(3. + 4.d.)	30.41%
7. July 1, 2017 total pension rate, before adjustment		49.72%
8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)		(19.31%)
9. July 1, 2017 Tier 1/Tier 2 UAL rate, before collar		29.99%
10. July 1, 2017 Tier 1/Tier 2 UAL rate, after collar	(8. + 9.)	10.68%
11. July 1, 2017 Tier 1/Tier 2 pension rate, after collar		30.41%
12. Tier 1/Tier 2 retiree healthcare rate		0.50%
13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)		0.00%
14. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment		19.58%
15. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)		19.58%
16. July 1, 2017 Tier 1/Tier 2 pension rate, after minimum adjustment	(11. + 13.)	30.41%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Post-Rate Collar)

The table below summarizes the employer's pension contribution rate for Tier 1 /Tier 2 after adjustments for the rate collar and the 6 percent of payroll minimum employer contribution rate.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	19.58%	19.76%
b. Tier 1/Tier 2 UAL rate	10.68%	10.50%
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate <i>(a. + b. + c., minimum of 5.50%)</i>	30.41%	30.41%

Data

Demographic Information

Employer Valuation Payroll

	General Service	Police & Fire	Total
Tier 1	\$5,094,773	\$1,649,296	\$6,744,069
Tier 2	3,664,091	2,012,550	5,676,641
Tier 1/Tier 2 valuation payroll	8,758,864	3,661,846	12,420,710
OPSRP valuation payroll	8,750,200	3,765,304	12,515,504
Combined valuation payroll	\$17,509,064	\$7,427,150	\$24,936,214

Employer Member Census

	December 31							
	2015				2014			
	Tier 1	Tier 2	OPSRP	Total	Tier 1	Tier 2	OPSRP	Total
Active Members ¹								
General Service	98	77	226	401	116	93	227	436
Police & Fire	21	24	60	105	24	25	51	100
Total	119	101	286	506	140	118	278	536
Active Members with previous service segments with the employer								
General Service	105	88	N/A	193	113	94	N/A	207
Police & Fire	16	17	N/A	33	17	19	N/A	36
Total	121	105	N/A	226	130	113	N/A	243
Dormant Members								
General Service	107	110	73	290	113	111	66	290
Police & Fire	6	8	4	18	11	11	4	26
Total	113	118	77	308	124	122	70	316
Retired Members and Beneficiaries								
General Service	911	90	19	1,020	909	58	16	983
Police & Fire	159	16	1	176	157	9	1	167
Total	1,070	106	20	1,196	1,066	67	17	1,150
Grand Total Number of Members	1,423	430	383	2,236	1,460	420	365	2,245

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Data

Demographic Information (continued)

Employer Tier 1/Tier 2 Active Members as of December 31, 2015

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
<20										
20-24										
25-29										
30-34			1							1
35-39	1	1	6	4						12
40-44			14	9	1					24
45-49			9	14	11	6				40
50-54			11	8	5	11	1			36
55-59		1	3	10	12	14	3	3		46
60-64			7	6	15	13	3	4	1	49
65-69			2	1	2	2			1	8
70-74		1		1	1					3
75+					1					1
Total	1	3	53	53	48	46	7	7	2	220

Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2015

Dormant Members			Retired Members and Beneficiaries		
Age	Count	Average Deferred Monthly Benefit	Age	Count	Average Monthly Benefit
<20			<45	2	952
20-24			45-49	5	1,504
25-29			50-54	16	1,470
30-34	1	574	55-59	61	1,710
35-39	5	540	60-64	207	1,920
40-44	15	432	65-69	282	1,704
45-49	23	1,197	70-74	222	1,297
50-54	40	967	75-79	155	1,429
55-59	54	719	80-84	116	1,423
60-64	59	1,068	85-89	60	910
65-69	17	2,079	90-94	38	550
70-74	7	167	95-99	11	591
75+	10	557	100+	1	164
Total	231	952	Total	1,176	1,507

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2015 valuation can be found in the system-wide actuarial valuation report.

Actuarial Methods and Valuation Procedures

A brief summary of the methods used in this valuation is shown below:

<i>Actuarial cost method</i>	Entry Age Normal.
<i>Amortization Method</i>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. Gains and losses between subsequent odd-year valuations will be amortized as a level percentage of projected combined valuation payroll over a closed 20 year period.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.</p>

Economic Assumptions

A brief summary of the key economic assumptions used in this valuation is shown below:

<i>Net investment return</i>	7.50% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.50% compounded annually on members' regular account balances.</p> <p>7.50% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 6.3% in 2016 to 4.4% in 2094.
<i>Administrative Expenses</i>	<p>\$5.5 million added to OPSRP normal cost.</p> <p>\$33.0 million added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2014 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

There were no changes in actuarial methods and allocation procedures since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA actuarial methods and allocation procedures is provided as part of the system-wide valuation report.

Changes in Assumptions

There were no changes in assumptions since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA assumptions is provided as part of the system-wide valuation report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Glossary

Actuarial Accrued Liability

The portion of the present value of prospective benefits allocated to service and compensation before the valuation date in accordance with the actuarial cost method.

Actuarial Asset Value

The value of assets used in calculating the required contributions. The actuarial asset value may be equal to the fair market value of assets, or it may spread the recognition of certain investment gains or losses over a period of years in accordance with an asset valuation method.

Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disablement and retirement; rates of investment earnings and other relevant items.

Actuarial Cost Method

Sometimes called “funding method,” a particular technique used by actuaries to establish the amount and incidence of the annual actuarial cost of pension plan benefits, or normal cost, and the related unfunded actuarial accrued liability. Ordinarily, the annual contribution to the plan comprises the normal cost and an amount for amortization of the unfunded actuarial accrued liability.

Actuarial Gain or (Loss)

A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions, during the period between two actuarial valuation dates, as determined in accordance with a particular actuarial cost method.

Combined Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for both Tier 1/Tier 2 and OPSRP active members. This payroll is used to calculate UAL rates.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

Employer Contribution Rate

Consists of the normal cost rate and the UAL rates, plus adjustments for other items such as side account rate offsets.

Funded Status

The actuarial value of assets expressed as a percentage of the actuarial accrued liability.

Normal Cost

The annual cost allocated to the current year, under the actuarial cost method in use. The normal cost divided by the applicable payroll is the normal cost rate.

OPSRP Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for OPSRP active members. This payroll is used to calculate OPSRP normal cost rates.

Glossary

Pre-SLGRP Liability

The sum of Pre-SLGRP Pooled Liabilities and Transition Liabilities.

Pre-SLGRP Pooled Liability

The difference between the total UAL and the UAL attributable to the SLGRP for a pool of employers that joined the SLGRP. There are currently two pre-SLGRP pools. One was created for State Agencies and Community Colleges when the SLGRP was formed. The other one was created when the Local Government Rate Pool joined the SLGRP.

Present Value

Sometimes called “actuarial present value,” the estimated cost (as of the valuation date) of a series of future payments. The present value is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Rate Collar

A methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution rate and funded status.

Required Supplementary Information (RSI)

Schedules, statistical data, and other information that are an essential part of financial reporting and should be presented with, but are not part of, the basic financial statements of a governmental entity.

Statement No. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions.

Statement No. 68 of the Governmental Accounting Standards Board (GASB 68)

The accounting standard governing a state or local governmental employer’s accounting for pensions for fiscal years beginning after June 15, 2014.

Statement No. 75 of the Governmental Accounting Standards Board (GASB 75)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

The difference between the total UAL and the UAL attributable to the SLGRP for an individual employer that joined the SLGRP or the Local Government Rate Pool.

Unfunded Accrued Liability (UAL)

The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. The UAL is divided by combined valuation payroll and an amortization factor to determine an initial pre-collar UAL rate. The final UAL rate can be adjusted by the rate collar.



Milliman
111 SW Fifth Avenue, Suite 3700
Portland, OR 97204-3654
503 227 0634

This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

September 2016

Douglas Soil & Water Conservation District/2743
Oregon Public Employees Retirement System

Dear Sir or Madam:

As part of our engagement with the Oregon Public Employees Retirement Board, we performed a system-wide actuarial valuation of the Oregon Public Employees Retirement System (“PERS” or “the System”) as of December 31, 2015. The attached report, which is an informational supplement to the system-wide report, provides you with employer-specific contribution rates that will become effective July 1, 2017. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information will be provided separately by PERS and is not included in this report.

This report reflects the System's benefit provisions in effect as of December 31, 2015. The full development of the valuation results for the OPSRP and Retiree Health Insurance Account (RHIA) programs can be found in the separate system-wide actuarial valuation report. Costs of the IAP (Individual Account Program) are not included in this or the system-wide actuarial valuation report. Further, costs of pension obligation bond payments are not included in this or the system-wide actuarial valuation report.

If you have any questions about this report, please contact Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, OPSRP general service, and OPSRP police and fire payroll,
- Information to assist you in completing GASB 45 financial reporting requirements, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- Detailed development of Tier 1/Tier 2 valuation results,
- A brief summary of methods and assumptions, and
- A brief summary of any changes in System benefit provisions.

Additional information is provided in the system-wide actuarial valuation report, which is available at www.oregon.gov/PERS/Pages/section/financial_reports/financials.aspx.



September 2016
Douglas Soil & Water Conservation District/2743

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the System's staff. This information includes, but is not limited to, System benefit provisions as defined by statute, member census data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for the System have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer a reasonable estimate of anticipated experience affecting the System.

A valuation report is only an estimate of the System's financial condition as of a single date. It can neither predict the System's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of System benefits, only the timing of System contributions. While a valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: System experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the System's funded status); and changes in System benefit provisions or applicable law. Due to the limited scope of this assignment, we did not perform an analysis of the potential range of future measurements. The Board has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in September 2015.

Some of the actuarial computations presented in this report are for purposes of determining the contribution rates effective from July 2017 to June 2019 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.



September 2016
Douglas Soil & Water Conservation District/2743

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the System. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

Additional information is provided in the system-wide actuarial valuation report.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Larrabee".

Matt Larrabee, FSA, EA, MAAA
Principal and Consulting Actuary

A handwritten signature in black ink, appearing to read "Scott Preppernau".

Scott Preppernau, FSA, EA, MAAA
Principal and Consulting Actuary



ACTUARIAL VALUATION REPORT DECEMBER 31, 2015

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

INDEPENDENT EMPLOYERS

Douglas Soil & Water Conservation District -- #2743

September 2016

CONTENTS

Executive Summary	1
<i>Employer Contribution Rates</i>	1
<i>Accounting Information</i>	3
<i>Principal Valuation Results</i>	5
▪ Employer	5
▪ Tier 1/Tier 2	6
▪ OPSRP	7
▪ Retiree Healthcare	7
Side Account Information	8
Tier 1/Tier 2 Valuation Results	10
<i>Assets</i>	10
<i>Liabilities</i>	11
<i>Unfunded Accrued Liability (UAL)</i>	13
<i>Contribution Rate Development</i>	15
Data	20
Brief Summary of Actuarial Methods and Assumptions	22
Brief Summary of Changes in Plan Provisions	24
Glossary	25

Executive Summary

Milliman has prepared this report for Douglas Soil & Water Conservation District to:

- Provide summary December 31, 2015 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2017 through June 30, 2019,
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2015, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45. GASB 68 information will be provided separately by PERS and is not included in this report.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2015 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Douglas Soil & Water Conservation District.

Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2017 through June 30, 2019 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

Employer Rates Effective July 1, 2017 for Douglas Soil & Water Conservation District

	Payroll		
	Tier 1/Tier 2	OPSRP General Service	Police & Fire
Pension			
Normal cost rate	21.98%	8.02%	12.79%
Tier 1/Tier 2 UAL rate ¹	(16.48%)	(16.48%)	(16.48%)
OPSRP UAL rate	1.27%	1.27%	1.27%
Side account rate relief	0.00%	0.00%	0.00%
Net pension contribution rate	6.77%	0.00%	0.00%
Retiree Healthcare			
Normal cost rate	0.07%	0.00%	0.00%
UAL rate	0.43%	0.43%	0.43%
Net retiree healthcare rate	0.50%	0.43%	0.43%
Total net employer contribution rate	7.27%	0.43%	0.43%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate.

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 Biennium

The rate collar limits changes in contribution rates, but does not limit changes in rates for individual employers related to side accounts. The table below shows the possible minimum and maximum rates first effective as of July 1, 2019, which will depend on the funded status as of December 31, 2017. If the employer's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2015 is 139%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	5.50%	5.50%
Minimum 2019-2021 Rate	2.50%	0.00%
Maximum 2019-2021 Rate	8.50%	11.50%

Executive Summary

Accounting Information

Milliman is not an accounting or audit firm and cannot provide accounting advice. Milliman is not responsible for the interpretation of, or compliance with, accounting standards; citations to, and descriptions of accounting standards provided in this report are for reference purposes only. The information provided in this section is intended to assist the employer in completing its financial statements, but any accounting determination should be reviewed by your auditor.

Pension

In June 2012 the GASB issued Statement No. 68, which replaced GASB 27 and governs employer financial reporting for fiscal years beginning after June 15, 2014. The new standard replaced many of the key elements of the prior reporting requirements. Under the new rules, employers are required to record a balance sheet liability for their unfunded pension obligations. In addition, the timing and coordination of plan and employer reporting has changed under the new requirements. GASB 68 information for employers will be provided separately by PERS and is not included in this report.

Schedule of Funding Progress

Under GASB 27, the Schedule of Funding Progress for Tier 1/Tier 2 pension liabilities was reported in the Required Supplementary Information. This schedule is no longer required now that GASB 68 has replaced GASB 27. However, for additional information and the sake of historical comparison, the updated schedule is shown below for the last several valuations. For employers with side accounts, the actuarial value of assets in this Schedule includes the value of the employer's side accounts.

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (b - a)	Funded Ratio (a ÷ b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a) ÷ c)
12/31/2010	\$453,715	\$393,860	(\$59,855)	115%	\$189,449	(32%)
12/31/2011	486,244	424,745	(61,499)	114%	242,761	(25%)
12/31/2012	577,655	353,317	(224,338)	163%	225,262	(100%)
12/31/2013	646,570	408,777	(237,793)	158%	208,958	(114%)
12/31/2014	689,577	461,101	(228,476)	150%	158,904	(144%)
12/31/2015	707,135	510,214	(196,921)	139%	93,397	(211%)

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) is a cost-sharing pool under Statement No. 45 of the Governmental Accounting Standards Board (GASB 45). Consequently, each employer reports the contractually required contribution. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 was calculated as a part of this valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
	Tier 1 / Tier 2	OPSRP	
		General Service	Police & Fire
July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern employer financial reporting for retiree healthcare obligations for fiscal years beginning after June 15, 2017. In general, the changes required by GASB 75 parallel those that occurred for pension reporting when GASB 68 replaced GASB 27. Accounting information for reporting under GASB 75 will be provided separately and is not included in this report.

Executive Summary

Principal Valuation Results

A summary of principal valuation results from the current valuation and the prior valuation follows. Any changes in actuarial assumptions, methods or plan provisions between the two valuations are described later in this report. More detailed information can be found in the system-wide actuarial valuation report.

Douglas Soil & Water Conservation District

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
T1/T2 UAL	(\$196,921)	(\$228,476)
Allocated pooled OPSRP UAL	13,278	18,166
Side account	0	0
Net unfunded pension actuarial accrued liability	(183,643)	(210,310)
Combined valuation payroll	93,397	158,904
Net pension UAL as a percentage of payroll	(197%)	(132%)
Calculated side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	\$454	\$1,263

In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer’s combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.

Executive Summary

Principal Valuation Results (continued)

Tier 1/Tier 2

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
Normal cost	\$10,897	\$13,530
Tier 1/Tier 2 valuation payroll	55,331	55,422
Tier 1/Tier 2 pension normal cost rate	21.98%	24.41%
Tier 1/ Tier 2 Actuarial accrued liability	\$510,214	\$461,101
Actuarial asset value	707,135	689,577
Tier 1/Tier 2 Unfunded actuarial accrued liability	(196,921)	(228,476)
Tier 1/ Tier 2 Funded status	139%	150%
Combined valuation payroll	\$93,397	\$158,904
Tier 1/Tier 2 UAL as a percentage of payroll	(211%)	(144%)
Tier 1/Tier 2 UAL rate (includes Multnomah Fire District #10)	(16.48%)	(10.64%)
Tier 1/Tier 2 active members ¹	1	1
Tier 1/Tier 2 dormant members	5	5
Tier 1/Tier 2 retirees and beneficiaries	2	2

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
General service normal cost	\$342.2	\$301.3
OPSRP general service valuation payroll	4,266.9	3,720.4
General service normal cost rate	8.02%	8.10%
Police and fire normal cost	\$69.9	\$59.6
OPSRP police and fire valuation payroll	546.4	462.3
Police and fire normal cost rate	12.79%	12.90%
Actuarial accrued liability	\$3,742.5	\$3,064.1
Actuarial asset value	2,389.1	2,024.6
Unfunded actuarial accrued liability	1,353.5	1,039.5
Funded status	64%	66%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	14%	11%
UAL rate	1.27%	1.01%

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
RHIA		
Normal cost	\$3.3	\$3.5
Tier 1 / Tier 2 valuation payroll	4,730.8	4,933.1
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	\$465.6	\$468.4
Actuarial asset value	419.3	395.9
Unfunded actuarial accrued liability	46.3	72.5
Funded status	90%	85%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	0%	1%
UAL rate	0.43%	0.43%

Side Account Information

Reconciliation of Side Accounts

The following table reconciles the total side account from the beginning of the year to the end of the year. Side account transfers were calculated by PERS and made on a monthly basis. The amount of these transfers is shown in the table below.

All information in this table has been provided by PERS.

	New	Continuing	Total
1. Side account as of December 31, 2014	N/A		
2. Deposits made during 2015		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2015			
5. Side account earnings during 2015			
6. Side account as of December 31, 2015 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2015	December 31, 2014
Side account 1	\$0	\$0
Side account 2	0	0
Side account 3	0	0
Total	\$0	\$0

Development of Side Account Rate

The rate relief attributable to an employer's side account is determined by amortizing the side account balance on the valuation date over a fixed period, and expressing the result as a percentage of combined valuation payroll. For side accounts established prior to December 31, 2009, the fixed period ends December 31, 2027. For side accounts established at a later date, the fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2015	December 31, 2014
1. Total side account	\$0	\$0
2. Combined valuation payroll	93,397	158,904
3. Average Amortization factor	9.504	10.118
4. Total side account rate (-1. ÷ 2. ÷ 3.)¹	0.00%	0.00%

¹ For employers with more than one side account, the Total Side Account Rate is determined by calculating the rate on each side account separately and adding the rates together.

Tier 1/Tier 2 Valuation Results

Assets

A summary of the market value of pension assets, and reconciliation from the prior year are shown below.

Summary of Market Value of Tier 1/Tier 2 Pension Assets

	December 31, 2015	December 31, 2014
1. Member reserves	\$210,139	\$198,465
2. Employer reserves	460,044	449,828
3. Benefits in force reserve	36,952	41,284
4. Total market value of assets (1. + 2. + 3.)	\$707,135	\$689,577

The market value of member and employer reserves is provided by PERS. The benefits in force reserve provided by PERS is allocated each year among employers in proportion to their liabilities for retired members and beneficiaries.

Reconciliation of Tier 1/Tier 2 Pension Assets

	December 31, 2014 to December 31, 2015
1. Market value of assets at beginning of year	\$689,577
2. Regular employer contributions	1,449
3. Benefit payments and expense	(6,720)
4. Adjustments ¹	4,337
5. Interest credited	18,492
6. Total transferred from side accounts	0
7. Market value of assets at end of year (1. + 2. + 3. + 4. + 5. + 6.)	\$707,135

¹ Note the adjustment item above includes a reallocation of the benefits in force reserve, transfers to Multnomah Fire District #10, and other adjustments made by PERS.

Tier 1/Tier 2 Valuation Results

Liabilities

Normal Cost

The normal cost represents the value of benefits assigned to the next year of service by the actuarial cost method. If all actuarial assumptions are met, the normal cost represents the amount that would need to be contributed each year to fund plan benefits. Amounts shown below include assumed administrative expenses, which are allocated pro-rata based on normal cost.

Summary of Normal Cost by Tier/Member Classification

	December 31, 2015	December 31, 2014
Tier 1 Police & Fire	\$0	\$0
Tier 1 General Service	10,897	13,530
Tier 2 Police & Fire	0	0
Tier 2 General Service	0	0
Total	\$10,897	\$13,530

Change in Tier 1/Tier 2 Normal Cost

The following table shows the impact of the assumption, method, and plan changes on normal cost as of December 31, 2015.

	Before Changes	After Changes	Net Change
Normal Cost	\$10,897	\$10,897	\$0

Tier 1/Tier 2 Valuation Results

Liabilities

Actuarial Accrued Liability

The actuarial accrued liability represents the value of benefits allocated to service performed before the valuation date by the actuarial cost method. If all actuarial assumptions are met, the actuarial accrued liability represents the amount of assets that would need to be accumulated as of the valuation date to provide for the portion of benefits allocated to service already performed.

Summary of Actuarial Accrued Liability by Tier/Member Classification

	December 31, 2015	December 31, 2014
Active Members		
▪ Tier 1 Police & Fire	\$0	\$0
▪ Tier 1 General Service	305,393	262,035
▪ Tier 2 Police & Fire	0	0
▪ Tier 2 General Service	14,918	11,701
▪ Total Active Members	\$320,311	\$273,736
Dormant Members	110,115	107,275
Retired Members and Beneficiaries	79,788	80,090
Total Actuarial Accrued Liability	\$510,214	\$461,101

Change in Tier 1/Tier 2 Actuarial Accrued Liability

The following table shows the impact of the assumption, method, and plan changes on the actuarial accrued liability as of December 31, 2015.

	Before Changes	After Changes	Net Change
Actuarial Accrued Liability	\$510,214	\$510,214	\$0

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Summary of UAL

The UAL represents the difference between the assets accumulated and the liability attributed to prior years of service by the cost method.

	December 31, 2015	December 31, 2014
1. Actuarial accrued liability	\$510,214	\$461,101
2. Actuarial value of assets	707,135	689,577
3. Unfunded accrued liability (1. – 2.)	(196,921)	(228,476)
4. Funded percentage (2. ÷ 1.)	139%	150%
5. Combined valuation payroll	\$93,397	\$158,904
6. Unfunded accrued liability as % of combined valuation payroll (3. ÷ 5.)	(211%)	(144%)

Reconciliation of UAL Bases

Beginning with the December 31, 2013 actuarial valuation, each odd-year valuation establishes a 20-year closed-period amortization schedule for outstanding Tier 1/Tier 2 UAL amounts. Amortization schedules are calculated based on the total Tier 1/Tier 2 UAL as of that valuation date less the remaining unamortized balance of previously established Tier 1/Tier 2 UAL bases.

Amortization Base	UAL December 31, 2014	Payment	Interest	UAL December 31, 2015	Next Year's Payment
December 31, 2013	(\$238,301)	(\$17,850)	(\$17,159)	(\$237,610)	(\$18,475)
December 31, 2015	N/A	N/A	N/A	\$40,689	\$2,944
Total				(\$196,921)	(\$15,531)

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Actuarial Gain or Loss since Prior Valuation

The system-wide actuarial valuation report contains a detailed analysis of gains and losses since the last valuation. The table below shows the gain or loss for the individual employer.

1. Expected actuarial accrued liability	
a. Actuarial accrued liability at December 31, 2014	\$461,101
b. Normal cost at December 31, 2014 (excluding assumed expenses)	12,943
c. Benefit payments during 2015	(6,668)
d. Interest at 7.50% to December 31, 2015	34,818
e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)	502,194
f. Change in actuarial accrued liability due to assumption, method, and plan changes	0
g. Expected actuarial accrued liability at December 31, 2015 (e. + f.)	502,194
2. Actuarial accrued liability at December 31, 2015	510,214
3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)	(8,020)
4. Expected actuarial value of assets	
a. Actuarial value of assets at December 31, 2014	689,577
b. Contributions for 2015 ¹	1,449
c. Benefit payments and expenses during 2015	(6,720)
d. Interest at 7.50% to December 31, 2015	51,521
e. Expected actuarial value of assets at December 31, 2015 (a. + b. + c. + d.)	735,827
5. Actuarial value of assets at December 31, 2015	707,135
6. Gain/(loss) on actuarial value of assets (5. - 4.e.)	(28,692)
7. Total actuarial gain/(loss) (3. + 6.)	(\$36,712)

Unfunded Accrued Liability Reconciliation

A reconciliation of the Tier 1/Tier 2 UAL from December 31, 2014 is provided below.

1. UAL at December 31, 2014	(\$228,476)
2. Expected increase	(5,157)
3. Liability (gain)/loss	8,020
4. Asset (gain)/loss	28,692
5. Change due to changes in assumptions, methods, and plan provisions	0
6. UAL at December 31, 2015 (1. + 2. + 3. + 4. + 5.)	(\$196,921)

¹ Includes rate relief from side accounts.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Normal Cost Rate

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

Development of Tier 1/Tier 2 Normal Cost Rate

	December 31, 2015			December 31, 2014		
	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate
Tier 1 Police & Fire	\$0	\$0	0.00%	\$0	\$0	0.00%
Tier 1 General Service	10,897	55,331	19.69%	13,530	55,422	24.41%
Tier 2 Police & Fire	0	0	0.00%	0	0	0.00%
Tier 2 General Service	0	0	0.00%	0	0	0.00%
Total	\$10,897	\$55,331	19.69%	\$13,530	\$55,422	24.41%

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Development of Tier 1/Tier 2 UAL Rates

The UAL rate is determined by calculating the next year's scheduled payment to the UAL as a percentage of combined valuation payroll.

	December 31, 2015	December 31, 2014
1. Total Tier 1/Tier 2 UAL	(\$196,921)	(\$228,476)
2. Next year's Tier 1/Tier 2 UAL payment	(15,531)	(17,139)
3. Combined valuation payroll	93,397	158,904
4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)	(16.63%)	(10.79%)

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	19.69%	24.41%
b. Tier 1/Tier 2 UAL rate	(16.63%)	(10.79%)
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate (a. + b. + c.)	3.21%	13.77%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Adjustments Due to Rate Collar and Minimum Rate Requirements

Employer contribution rates are generally limited to change by no more than the greater of 3 percent of payroll or 20 percent from the current contribution rate. However, if the funded percentage excluding side accounts is below 60 percent or above 140 percent the rate collar doubles in size. If the funded percentage excluding side accounts is between 60 and 70 percent or 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

The table below shows the current contribution rate for the period from July 1, 2015 through June 30, 2017, develops the maximum and minimum contribution rates effective July 1, 2017 based on the collar, and calculates the net adjustment due to the collar and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

1. Current net Tier 1/Tier 2 pension contribution rate		8.03%
2. Employer contribution rate attributable to side accounts		0.00%
3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)		8.03%
4. Size of rate collar		
a. 20% of current employer contribution rate (20% x 3.)		1.61%
b. Preliminary size of rate collar (maximum of 3% or a.)		3.00%
c. Funded percentage		139%
d. Size of rate collar (If c. < 60% or c. > 140%, 2 x b. If c. is 70%-130%, b. Otherwise, a graded rate between b. and 2 x b.)		5.70%
5. July 1, 2017 minimum employer contribution rate	(3. – 4.d. but not < 0%)	2.33%
6. July 1, 2017 maximum employer contribution rate	(3. + 4.d.)	13.73%
7. July 1, 2017 total pension rate, before adjustment		3.21%
8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)		0.00%
9. July 1, 2017 Tier 1/Tier 2 UAL rate, before collar		(16.63%)
10. July 1, 2017 Tier 1/Tier 2 UAL rate, after collar	(8. + 9.)	(16.63%)
11. July 1, 2017 Tier 1/Tier 2 pension rate, after collar		3.21%
12. Tier 1/Tier 2 retiree healthcare rate		0.50%
13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)		2.29%
14. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment		19.69%
15. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)		21.98%
16. July 1, 2017 Tier 1/Tier 2 pension rate, after minimum adjustment	(11. + 13.)	5.50%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Post-Rate Collar)

The table below summarizes the employer's pension contribution rate for Tier 1 /Tier 2 after adjustments for the rate collar and the 6 percent of payroll minimum employer contribution rate.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	21.98%	24.41%
b. Tier 1/Tier 2 UAL rate	(16.63%)	(10.79%)
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate	5.50%	13.77%
<i>(a. + b. + c., minimum of 5.50%)</i>		

Data

Demographic Information

Employer Valuation Payroll

	General Service	Police & Fire	Total
Tier 1	\$55,331	\$0	\$55,331
Tier 2	0	0	0
Tier 1/Tier 2 valuation payroll	55,331	0	55,331
OPSRP valuation payroll	38,066	0	38,066
Combined valuation payroll	\$93,397	\$0	\$93,397

Employer Member Census

	December 31							
	2015				2014			
	Tier 1	Tier 2	OPSRP	Total	Tier 1	Tier 2	OPSRP	Total
Active Members ¹								
General Service	1	0	1	2	1	0	3	4
Police & Fire	0	0	0	0	0	0	0	0
Total	1	0	1	2	1	0	3	4
Active Members with previous service segments with the employer								
General Service	3	1	N/A	4	3	1	N/A	4
Police & Fire	0	0	N/A	0	0	0	N/A	0
Total	3	1	N/A	4	3	1	N/A	4
Dormant Members								
General Service	2	3	1	6	2	3	1	6
Police & Fire	0	0	0	0	0	0	0	0
Total	2	3	1	6	2	3	1	6
Retired Members and Beneficiaries								
General Service	1	1	0	2	1	1	0	2
Police & Fire	0	0	0	0	0	0	0	0
Total	1	1	0	2	1	1	0	2
Grand Total Number of Members	7	5	2	14	7	5	4	16

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Data

Demographic Information (continued)

Employer Tier 1/Tier 2 Active Members as of December 31, 2015

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
<20										
20-24										
25-29										
30-34										
35-39										
40-44										
45-49										
50-54										
55-59						1				1
60-64										
65-69										
70-74										
75+										
Total	0	0	0	0	0	1	0	0	0	1

Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2015

Dormant Members			Retired Members and Beneficiaries		
Age	Count	Average Deferred Monthly Benefit	Age	Count	Average Monthly Benefit
<20			<45		
20-24			45-49		
25-29			50-54		
30-34			55-59	1	18
35-39			60-64		
40-44			65-69	1	574
45-49	2	640	70-74		
50-54	1	198	75-79		
55-59	1	4	80-84		
60-64			85-89		
65-69	1	696	90-94		
70-74			95-99		
75+			100+		
Total	5	436	Total	2	296

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2015 valuation can be found in the system-wide actuarial valuation report.

Actuarial Methods and Valuation Procedures

A brief summary of the methods used in this valuation is shown below:

<i>Actuarial cost method</i>	Entry Age Normal.
<i>Amortization Method</i>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. Gains and losses between subsequent odd-year valuations will be amortized as a level percentage of projected combined valuation payroll over a closed 20 year period.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.</p>

Economic Assumptions

A brief summary of the key economic assumptions used in this valuation is shown below:

<i>Net investment return</i>	7.50% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.50% compounded annually on members' regular account balances.</p> <p>7.50% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 6.3% in 2016 to 4.4% in 2094.
<i>Administrative Expenses</i>	<p>\$5.5 million added to OPSRP normal cost.</p> <p>\$33.0 million added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2014 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

There were no changes in actuarial methods and allocation procedures since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA actuarial methods and allocation procedures is provided as part of the system-wide valuation report.

Changes in Assumptions

There were no changes in assumptions since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA assumptions is provided as part of the system-wide valuation report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Glossary

Actuarial Accrued Liability

The portion of the present value of prospective benefits allocated to service and compensation before the valuation date in accordance with the actuarial cost method.

Actuarial Asset Value

The value of assets used in calculating the required contributions. The actuarial asset value may be equal to the fair market value of assets, or it may spread the recognition of certain investment gains or losses over a period of years in accordance with an asset valuation method.

Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disablement and retirement; rates of investment earnings and other relevant items.

Actuarial Cost Method

Sometimes called “funding method,” a particular technique used by actuaries to establish the amount and incidence of the annual actuarial cost of pension plan benefits, or normal cost, and the related unfunded actuarial accrued liability. Ordinarily, the annual contribution to the plan comprises the normal cost and an amount for amortization of the unfunded actuarial accrued liability.

Actuarial Gain or (Loss)

A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions, during the period between two actuarial valuation dates, as determined in accordance with a particular actuarial cost method.

Combined Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for both Tier 1/Tier 2 and OPSRP active members. This payroll is used to calculate UAL rates.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

Employer Contribution Rate

Consists of the normal cost rate and the UAL rates, plus adjustments for other items such as side account rate offsets.

Funded Status

The actuarial value of assets expressed as a percentage of the actuarial accrued liability.

Normal Cost

The annual cost allocated to the current year, under the actuarial cost method in use. The normal cost divided by the applicable payroll is the normal cost rate.

OPSRP Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for OPSRP active members. This payroll is used to calculate OPSRP normal cost rates.

Glossary

Pre-SLGRP Liability

The sum of Pre-SLGRP Pooled Liabilities and Transition Liabilities.

Pre-SLGRP Pooled Liability

The difference between the total UAL and the UAL attributable to the SLGRP for a pool of employers that joined the SLGRP. There are currently two pre-SLGRP pools. One was created for State Agencies and Community Colleges when the SLGRP was formed. The other one was created when the Local Government Rate Pool joined the SLGRP.

Present Value

Sometimes called “actuarial present value,” the estimated cost (as of the valuation date) of a series of future payments. The present value is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Rate Collar

A methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution rate and funded status.

Required Supplementary Information (RSI)

Schedules, statistical data, and other information that are an essential part of financial reporting and should be presented with, but are not part of, the basic financial statements of a governmental entity.

Statement No. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions.

Statement No. 68 of the Governmental Accounting Standards Board (GASB 68)

The accounting standard governing a state or local governmental employer’s accounting for pensions for fiscal years beginning after June 15, 2014.

Statement No. 75 of the Governmental Accounting Standards Board (GASB 75)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

The difference between the total UAL and the UAL attributable to the SLGRP for an individual employer that joined the SLGRP or the Local Government Rate Pool.

Unfunded Accrued Liability (UAL)

The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. The UAL is divided by combined valuation payroll and an amortization factor to determine an initial pre-collar UAL rate. The final UAL rate can be adjusted by the rate collar.



Milliman
111 SW Fifth Avenue, Suite 3700
Portland, OR 97204-3654
503 227 0634

This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

September 2016

City of Dufur/2262
Oregon Public Employees Retirement System

Dear Sir or Madam:

As part of our engagement with the Oregon Public Employees Retirement Board, we performed a system-wide actuarial valuation of the Oregon Public Employees Retirement System (“PERS” or “the System”) as of December 31, 2015. The attached report, which is an informational supplement to the system-wide report, provides you with employer-specific contribution rates that will become effective July 1, 2017. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information will be provided separately by PERS and is not included in this report.

This report reflects the System's benefit provisions in effect as of December 31, 2015. The full development of the valuation results for the OPSRP and Retiree Health Insurance Account (RHIA) programs can be found in the separate system-wide actuarial valuation report. Costs of the IAP (Individual Account Program) are not included in this or the system-wide actuarial valuation report. Further, costs of pension obligation bond payments are not included in this or the system-wide actuarial valuation report.

If you have any questions about this report, please contact Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, OPSRP general service, and OPSRP police and fire payroll,
- Information to assist you in completing GASB 45 financial reporting requirements, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- Detailed development of Tier 1/Tier 2 valuation results,
- A brief summary of methods and assumptions, and
- A brief summary of any changes in System benefit provisions.

Additional information is provided in the system-wide actuarial valuation report, which is available at www.oregon.gov/PERS/Pages/section/financial_reports/financials.aspx.

September 2016
City of Dufur/2262

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the System's staff. This information includes, but is not limited to, System benefit provisions as defined by statute, member census data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for the System have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer a reasonable estimate of anticipated experience affecting the System.

A valuation report is only an estimate of the System's financial condition as of a single date. It can neither predict the System's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of System benefits, only the timing of System contributions. While a valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: System experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the System's funded status); and changes in System benefit provisions or applicable law. Due to the limited scope of this assignment, we did not perform an analysis of the potential range of future measurements. The Board has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in September 2015.

Some of the actuarial computations presented in this report are for purposes of determining the contribution rates effective from July 2017 to June 2019 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.



September 2016
City of Dufur/2262

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the System. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

Additional information is provided in the system-wide actuarial valuation report.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Larrabee".

Matt Larrabee, FSA, EA, MAAA
Principal and Consulting Actuary

A handwritten signature in black ink, appearing to read "Scott Preppernau".

Scott Preppernau, FSA, EA, MAAA
Principal and Consulting Actuary



ACTUARIAL VALUATION REPORT DECEMBER 31, 2015

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

INDEPENDENT EMPLOYERS

City of Dufur -- #2262

September 2016

CONTENTS

Executive Summary **1**

Employer Contribution Rates 1

Accounting Information 3

Principal Valuation Results 5

 ▪ Employer 5

 ▪ Tier 1/Tier 2 6

 ▪ OPSRP 7

 ▪ Retiree Healthcare 7

Side Account Information **8**

Tier 1/Tier 2 Valuation Results **10**

Assets 10

Liabilities 11

Unfunded Accrued Liability (UAL) 13

Contribution Rate Development 15

Data **20**

Brief Summary of Actuarial Methods and Assumptions **22**

Brief Summary of Changes in Plan Provisions **24**

Glossary **25**

Executive Summary

Milliman has prepared this report for City of Dufur to:

- Provide summary December 31, 2015 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2017 through June 30, 2019,
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2015, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45. GASB 68 information will be provided separately by PERS and is not included in this report.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2015 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to City of Dufur.

Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2017 through June 30, 2019 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

Employer Rates Effective July 1, 2017 for City of Dufur

	Payroll		
	Tier 1/Tier 2	OPSRP General Service	OPSRP Police & Fire
Pension			
Normal cost rate	15.16%	8.02%	12.79%
Tier 1/Tier 2 UAL rate ¹	3.26%	3.26%	3.26%
OPSRP UAL rate	1.27%	1.27%	1.27%
Side account rate relief	0.00%	0.00%	0.00%
Net pension contribution rate	19.69%	12.55%	17.32%
Retiree Healthcare			
Normal cost rate	0.07%	0.00%	0.00%
UAL rate	0.43%	0.43%	0.43%
Net retiree healthcare rate	0.50%	0.43%	0.43%
Total net employer contribution rate	20.19%	12.98%	17.75%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate.

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 Biennium

The rate collar limits changes in contribution rates, but does not limit changes in rates for individual employers related to side accounts. The table below shows the possible minimum and maximum rates first effective as of July 1, 2019, which will depend on the funded status as of December 31, 2017. If the employer's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2015 is 80%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	18.42%	18.42%
Minimum 2019-2021 Rate	14.74%	11.06%
Maximum 2019-2021 Rate	22.10%	25.78%

Executive Summary

Accounting Information

Milliman is not an accounting or audit firm and cannot provide accounting advice. Milliman is not responsible for the interpretation of, or compliance with, accounting standards; citations to, and descriptions of accounting standards provided in this report are for reference purposes only. The information provided in this section is intended to assist the employer in completing its financial statements, but any accounting determination should be reviewed by your auditor.

Pension

In June 2012 the GASB issued Statement No. 68, which replaced GASB 27 and governs employer financial reporting for fiscal years beginning after June 15, 2014. The new standard replaced many of the key elements of the prior reporting requirements. Under the new rules, employers are required to record a balance sheet liability for their unfunded pension obligations. In addition, the timing and coordination of plan and employer reporting has changed under the new requirements. GASB 68 information for employers will be provided separately by PERS and is not included in this report.

Schedule of Funding Progress

Under GASB 27, the Schedule of Funding Progress for Tier 1/Tier 2 pension liabilities was reported in the Required Supplementary Information. This schedule is no longer required now that GASB 68 has replaced GASB 27. However, for additional information and the sake of historical comparison, the updated schedule is shown below for the last several valuations. For employers with side accounts, the actuarial value of assets in this Schedule includes the value of the employer's side accounts.

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (b - a)	Funded Ratio (a ÷ b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a) ÷ c)
12/31/2010	\$592,439	\$715,139	\$122,700	83%	\$62,947	195%
12/31/2011	572,637	733,287	160,650	78%	91,905	175%
12/31/2012	629,723	718,190	88,467	88%	102,070	87%
12/31/2013	699,914	733,118	33,204	95%	108,602	31%
12/31/2014	712,173	852,957	140,784	83%	86,676	162%
12/31/2015	693,501	869,514	176,013	80%	119,198	148%

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) is a cost-sharing pool under Statement No. 45 of the Governmental Accounting Standards Board (GASB 45). Consequently, each employer reports the contractually required contribution. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 was calculated as a part of this valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
	Tier 1 / Tier 2	OPSRP	
		General Service	Police & Fire
July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern employer financial reporting for retiree healthcare obligations for fiscal years beginning after June 15, 2017. In general, the changes required by GASB 75 parallel those that occurred for pension reporting when GASB 68 replaced GASB 27. Accounting information for reporting under GASB 75 will be provided separately and is not included in this report.

Executive Summary

Principal Valuation Results

A summary of principal valuation results from the current valuation and the prior valuation follows. Any changes in actuarial assumptions, methods or plan provisions between the two valuations are described later in this report. More detailed information can be found in the system-wide actuarial valuation report.

City of Dufur

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
T1/T2 UAL	\$176,013	\$140,784
Allocated pooled OPSRP UAL	16,946	9,909
Side account	0	0
Net unfunded pension actuarial accrued liability	192,959	150,693
Combined valuation payroll	119,198	86,676
Net pension UAL as a percentage of payroll	162%	174%
Calculated side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	\$579	\$689

In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer’s combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.

Executive Summary

Principal Valuation Results (continued)

Tier 1/Tier 2

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
Normal cost	\$7,810	\$7,557
Tier 1/Tier 2 valuation payroll	51,510	49,091
Tier 1/Tier 2 pension normal cost rate	15.16%	15.39%
Tier 1/ Tier 2 Actuarial accrued liability	\$869,514	\$852,957
Actuarial asset value	693,501	712,173
Tier 1/Tier 2 Unfunded actuarial accrued liability	176,013	140,784
Tier 1/ Tier 2 Funded status	80%	83%
Combined valuation payroll	\$119,198	\$86,676
Tier 1/Tier 2 UAL as a percentage of payroll	148%	162%
Tier 1/Tier 2 UAL rate	3.26%	3.03%
(includes Multnomah Fire District #10)		
Tier 1/Tier 2 active members ¹	1	1
Tier 1/Tier 2 dormant members	0	0
Tier 1/Tier 2 retirees and beneficiaries	6	5

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
General service normal cost	\$342.2	\$301.3
OPSRP general service valuation payroll	4,266.9	3,720.4
General service normal cost rate	8.02%	8.10%
Police and fire normal cost	\$69.9	\$59.6
OPSRP police and fire valuation payroll	546.4	462.3
Police and fire normal cost rate	12.79%	12.90%
Actuarial accrued liability	\$3,742.5	\$3,064.1
Actuarial asset value	2,389.1	2,024.6
Unfunded actuarial accrued liability	1,353.5	1,039.5
Funded status	64%	66%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	14%	11%
UAL rate	1.27%	1.01%

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
RHIA		
Normal cost	\$3.3	\$3.5
Tier 1 / Tier 2 valuation payroll	4,730.8	4,933.1
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	\$465.6	\$468.4
Actuarial asset value	419.3	395.9
Unfunded actuarial accrued liability	46.3	72.5
Funded status	90%	85%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	0%	1%
UAL rate	0.43%	0.43%

Side Account Information

Reconciliation of Side Accounts

The following table reconciles the total side account from the beginning of the year to the end of the year. Side account transfers were calculated by PERS and made on a monthly basis. The amount of these transfers is shown in the table below.

All information in this table has been provided by PERS.

	New	Continuing	Total
1. Side account as of December 31, 2014	N/A		
2. Deposits made during 2015		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2015			
5. Side account earnings during 2015			
6. Side account as of December 31, 2015 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2015	December 31, 2014
Side account 1	\$0	\$0
Side account 2	0	0
Side account 3	0	0
Total	\$0	\$0

Development of Side Account Rate

The rate relief attributable to an employer's side account is determined by amortizing the side account balance on the valuation date over a fixed period, and expressing the result as a percentage of combined valuation payroll. For side accounts established prior to December 31, 2009, the fixed period ends December 31, 2027. For side accounts established at a later date, the fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2015	December 31, 2014
1. Total side account	\$0	\$0
2. Combined valuation payroll	119,198	86,676
3. Average Amortization factor	9.504	10.118
4. Total side account rate (-1. ÷ 2. ÷ 3.)¹	0.00%	0.00%

¹ For employers with more than one side account, the Total Side Account Rate is determined by calculating the rate on each side account separately and adding the rates together.

Tier 1/Tier 2 Valuation Results

Assets

A summary of the market value of pension assets, and reconciliation from the prior year are shown below.

Summary of Market Value of Tier 1/Tier 2 Pension Assets

	December 31, 2015	December 31, 2014
1. Member reserves	\$46,119	\$44,908
2. Employer reserves	336,232	320,924
3. Benefits in force reserve	311,150	346,341
4. Total market value of assets (1. + 2. + 3.)	\$693,501	\$712,173

The market value of member and employer reserves is provided by PERS. The benefits in force reserve provided by PERS is allocated each year among employers in proportion to their liabilities for retired members and beneficiaries.

Reconciliation of Tier 1/Tier 2 Pension Assets

	December 31, 2014 to December 31, 2015
1. Market value of assets at beginning of year	\$712,173
2. Regular employer contributions	8,953
3. Benefit payments and expense	(56,583)
4. Adjustments ¹	15,412
5. Interest credited	13,546
6. Total transferred from side accounts	0
7. Market value of assets at end of year (1. + 2. + 3. + 4. + 5. + 6.)	\$693,501

¹ Note the adjustment item above includes a reallocation of the benefits in force reserve, transfers to Multnomah Fire District #10, and other adjustments made by PERS.

Tier 1/Tier 2 Valuation Results

Liabilities

Normal Cost

The normal cost represents the value of benefits assigned to the next year of service by the actuarial cost method. If all actuarial assumptions are met, the normal cost represents the amount that would need to be contributed each year to fund plan benefits. Amounts shown below include assumed administrative expenses, which are allocated pro-rata based on normal cost.

Summary of Normal Cost by Tier/Member Classification

	December 31, 2015	December 31, 2014
Tier 1 Police & Fire	\$0	\$0
Tier 1 General Service	7,810	7,557
Tier 2 Police & Fire	0	0
Tier 2 General Service	0	0
Total	\$7,810	\$7,557

Change in Tier 1/Tier 2 Normal Cost

The following table shows the impact of the assumption, method, and plan changes on normal cost as of December 31, 2015.

	Before Changes	After Changes	Net Change
Normal Cost	\$7,810	\$7,810	\$0

Tier 1/Tier 2 Valuation Results

Liabilities

Actuarial Accrued Liability

The actuarial accrued liability represents the value of benefits allocated to service performed before the valuation date by the actuarial cost method. If all actuarial assumptions are met, the actuarial accrued liability represents the amount of assets that would need to be accumulated as of the valuation date to provide for the portion of benefits allocated to service already performed.

Summary of Actuarial Accrued Liability by Tier/Member Classification

	December 31, 2015	December 31, 2014
Active Members		
▪ Tier 1 Police & Fire	\$0	\$0
▪ Tier 1 General Service	197,682	181,064
▪ Tier 2 Police & Fire	0	0
▪ Tier 2 General Service	0	0
▪ Total Active Members	\$197,682	\$181,064
Dormant Members	0	0
Retired Members and Beneficiaries	671,832	671,893
Total Actuarial Accrued Liability	\$869,514	\$852,957

Change in Tier 1/Tier 2 Actuarial Accrued Liability

The following table shows the impact of the assumption, method, and plan changes on the actuarial accrued liability as of December 31, 2015.

	Before Changes	After Changes	Net Change
Actuarial Accrued Liability	\$869,514	\$869,514	\$0

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Summary of UAL

The UAL represents the difference between the assets accumulated and the liability attributed to prior years of service by the cost method.

	December 31, 2015	December 31, 2014
1. Actuarial accrued liability	\$869,514	\$852,957
2. Actuarial value of assets	693,501	712,173
3. Unfunded accrued liability (1. – 2.)	176,013	140,784
4. Funded percentage (2. ÷ 1.)	80%	83%
5. Combined valuation payroll	\$119,198	\$86,676
6. Unfunded accrued liability as % of combined valuation payroll (3. ÷ 5.)	148%	162%

Reconciliation of UAL Bases

Beginning with the December 31, 2013 actuarial valuation, each odd-year valuation establishes a 20-year closed-period amortization schedule for outstanding Tier 1/Tier 2 UAL amounts. Amortization schedules are calculated based on the total Tier 1/Tier 2 UAL as of that valuation date less the remaining unamortized balance of previously established Tier 1/Tier 2 UAL bases.

Amortization Base	UAL December 31, 2014	Payment	Interest	UAL December 31, 2015	Next Year's Payment
December 31, 2013	\$33,275	\$2,493	\$2,396	\$33,178	\$2,580
December 31, 2015	N/A	N/A	N/A	\$142,835	\$10,335
Total				\$176,013	\$12,915

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Actuarial Gain or Loss since Prior Valuation

The system-wide actuarial valuation report contains a detailed analysis of gains and losses since the last valuation. The table below shows the gain or loss for the individual employer.

1. Expected actuarial accrued liability	
a. Actuarial accrued liability at December 31, 2014	\$852,957
b. Normal cost at December 31, 2014 (excluding assumed expenses)	7,230
c. Benefit payments during 2015	(56,146)
d. Interest at 7.50% to December 31, 2015	62,137
e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)	866,178
f. Change in actuarial accrued liability due to assumption, method, and plan changes	0
g. Expected actuarial accrued liability at December 31, 2015 (e. + f.)	866,178
2. Actuarial accrued liability at December 31, 2015	869,514
3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)	(3,336)
4. Expected actuarial value of assets	
a. Actuarial value of assets at December 31, 2014	712,173
b. Contributions for 2015 ¹	8,953
c. Benefit payments and expenses during 2015	(56,583)
d. Interest at 7.50% to December 31, 2015	51,627
e. Expected actuarial value of assets at December 31, 2015 (a. + b. + c. + d.)	716,170
5. Actuarial value of assets at December 31, 2015	693,501
6. Gain/(loss) on actuarial value of assets (5. - 4.e.)	(22,669)
7. Total actuarial gain/(loss) (3. + 6.)	(\$26,005)

Unfunded Accrued Liability Reconciliation

A reconciliation of the Tier 1/Tier 2 UAL from December 31, 2014 is provided below.

1. UAL at December 31, 2014	\$140,784
2. Expected increase	9,224
3. Liability (gain)/loss	3,336
4. Asset (gain)/loss	22,669
5. Change due to changes in assumptions, methods, and plan provisions	0
6. UAL at December 31, 2015 (1. + 2. + 3. + 4. + 5.)	\$176,013

¹ Includes rate relief from side accounts.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Normal Cost Rate

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

Development of Tier 1/Tier 2 Normal Cost Rate

	December 31, 2015			December 31, 2014		
	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate
Tier 1 Police & Fire	\$0	\$0	0.00%	\$0	\$0	0.00%
Tier 1 General Service	7,810	51,510	15.16%	7,557	49,091	15.39%
Tier 2 Police & Fire	0	0	0.00%	0	0	0.00%
Tier 2 General Service	0	0	0.00%	0	0	0.00%
Total	\$7,810	\$51,510	15.16%	\$7,557	\$49,091	15.39%

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Development of Tier 1/Tier 2 UAL Rates

The UAL rate is determined by calculating the next year's scheduled payment to the UAL as a percentage of combined valuation payroll.

	December 31, 2015	December 31, 2014
1. Total Tier 1/Tier 2 UAL	\$176,013	\$140,784
2. Next year's Tier 1/Tier 2 UAL payment	12,915	10,272
3. Combined valuation payroll	119,198	86,676
4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)	10.83%	11.85%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	15.16%	15.39%
b. Tier 1/Tier 2 UAL rate	10.83%	11.85%
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate (a. + b. + c.)	26.14%	27.39%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Adjustments Due to Rate Collar and Minimum Rate Requirements

Employer contribution rates are generally limited to change by no more than the greater of 3 percent of payroll or 20 percent from the current contribution rate. However, if the funded percentage excluding side accounts is below 60 percent or above 140 percent the rate collar doubles in size. If the funded percentage excluding side accounts is between 60 and 70 percent or 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

The table below shows the current contribution rate for the period from July 1, 2015 through June 30, 2017, develops the maximum and minimum contribution rates effective July 1, 2017 based on the collar, and calculates the net adjustment due to the collar and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

1. Current net Tier 1/Tier 2 pension contribution rate		15.35%
2. Employer contribution rate attributable to side accounts		0.00%
3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)		15.35%
4. Size of rate collar		
a. 20% of current employer contribution rate (20% x 3.)		3.07%
b. Preliminary size of rate collar (maximum of 3% or a.)		3.07%
c. Funded percentage		80%
d. Size of rate collar (If c. < 60% or c. > 140%, 2 x b. If c. is 70%-130%, b. Otherwise, a graded rate between b. and 2 x b.)		3.07%
5. July 1, 2017 minimum employer contribution rate	(3. – 4.d. but not < 0%)	12.28%
6. July 1, 2017 maximum employer contribution rate	(3. + 4.d.)	18.42%
7. July 1, 2017 total pension rate, before adjustment		26.14%
8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)		(7.72%)
9. July 1, 2017 Tier 1/Tier 2 UAL rate, before collar		10.83%
10. July 1, 2017 Tier 1/Tier 2 UAL rate, after collar	(8. + 9.)	3.11%
11. July 1, 2017 Tier 1/Tier 2 pension rate, after collar		18.42%
12. Tier 1/Tier 2 retiree healthcare rate		0.50%
13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)		0.00%
14. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment		15.16%
15. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)		15.16%
16. July 1, 2017 Tier 1/Tier 2 pension rate, after minimum adjustment	(11. + 13.)	18.42%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Post-Rate Collar)

The table below summarizes the employer's pension contribution rate for Tier 1 /Tier 2 after adjustments for the rate collar and the 6 percent of payroll minimum employer contribution rate.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	15.16%	15.39%
b. Tier 1/Tier 2 UAL rate	3.11%	2.88%
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate <i>(a. + b. + c., minimum of 5.50%)</i>	18.42%	18.42%

Data

Demographic Information

Employer Valuation Payroll

	General Service	Police & Fire	Total
Tier 1	\$51,510	\$0	\$51,510
Tier 2	0	0	0
Tier 1/Tier 2 valuation payroll	51,510	0	51,510
OPSRP valuation payroll	67,688	0	67,688
Combined valuation payroll	\$119,198	\$0	\$119,198

Employer Member Census

	December 31							
	2015				2014			
	Tier 1	Tier 2	OPSRP	Total	Tier 1	Tier 2	OPSRP	Total
Active Members ¹								
General Service	1	0	2	3	1	0	1	2
Police & Fire	0	0	0	0	0	0	0	0
Total	1	0	2	3	1	0	1	2
Active Members with previous service segments with the employer								
General Service	0	0	N/A	0	1	0	N/A	1
Police & Fire	0	0	N/A	0	0	0	N/A	0
Total	0	0	N/A	0	1	0	N/A	1
Dormant Members								
General Service	0	0	2	2	0	0	2	2
Police & Fire	0	0	0	0	0	0	0	0
Total	0	0	2	2	0	0	2	2
Retired Members and Beneficiaries								
General Service	5	0	0	5	4	0	0	4
Police & Fire	1	0	0	1	1	0	0	1
Total	6	0	0	6	5	0	0	5
Grand Total Number of Members	7	0	4	11	7	0	3	10

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Data

Demographic Information (continued)

Employer Tier 1/Tier 2 Active Members as of December 31, 2015

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
<20										
20-24										
25-29										
30-34										
35-39										
40-44										
45-49										
50-54										
55-59										
60-64					1					1
65-69										
70-74										
75+										
Total	0	0	0	0	1	0	0	0	0	1

Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2015

Dormant Members			Retired Members and Beneficiaries		
Age	Count	Average Deferred Monthly Benefit	Age	Count	Average Monthly Benefit
<20			<45		
20-24			45-49		
25-29			50-54		
30-34			55-59	1	7
35-39			60-64	1	249
40-44			65-69	2	1,870
45-49			70-74		
50-54			75-79	1	53
55-59			80-84		
60-64			85-89	1	268
65-69			90-94		
70-74			95-99		
75+			100+		
Total			Total	6	719

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2015 valuation can be found in the system-wide actuarial valuation report.

Actuarial Methods and Valuation Procedures

A brief summary of the methods used in this valuation is shown below:

<i>Actuarial cost method</i>	Entry Age Normal.
<i>Amortization Method</i>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. Gains and losses between subsequent odd-year valuations will be amortized as a level percentage of projected combined valuation payroll over a closed 20 year period.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.</p>

Economic Assumptions

A brief summary of the key economic assumptions used in this valuation is shown below:

<i>Net investment return</i>	7.50% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.50% compounded annually on members' regular account balances.</p> <p>7.50% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 6.3% in 2016 to 4.4% in 2094.
<i>Administrative Expenses</i>	<p>\$5.5 million added to OPSRP normal cost.</p> <p>\$33.0 million added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2014 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

There were no changes in actuarial methods and allocation procedures since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA actuarial methods and allocation procedures is provided as part of the system-wide valuation report.

Changes in Assumptions

There were no changes in assumptions since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA assumptions is provided as part of the system-wide valuation report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Glossary

Actuarial Accrued Liability

The portion of the present value of prospective benefits allocated to service and compensation before the valuation date in accordance with the actuarial cost method.

Actuarial Asset Value

The value of assets used in calculating the required contributions. The actuarial asset value may be equal to the fair market value of assets, or it may spread the recognition of certain investment gains or losses over a period of years in accordance with an asset valuation method.

Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disablement and retirement; rates of investment earnings and other relevant items.

Actuarial Cost Method

Sometimes called “funding method,” a particular technique used by actuaries to establish the amount and incidence of the annual actuarial cost of pension plan benefits, or normal cost, and the related unfunded actuarial accrued liability. Ordinarily, the annual contribution to the plan comprises the normal cost and an amount for amortization of the unfunded actuarial accrued liability.

Actuarial Gain or (Loss)

A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions, during the period between two actuarial valuation dates, as determined in accordance with a particular actuarial cost method.

Combined Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for both Tier 1/Tier 2 and OPSRP active members. This payroll is used to calculate UAL rates.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

Employer Contribution Rate

Consists of the normal cost rate and the UAL rates, plus adjustments for other items such as side account rate offsets.

Funded Status

The actuarial value of assets expressed as a percentage of the actuarial accrued liability.

Normal Cost

The annual cost allocated to the current year, under the actuarial cost method in use. The normal cost divided by the applicable payroll is the normal cost rate.

OPSRP Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for OPSRP active members. This payroll is used to calculate OPSRP normal cost rates.

Glossary

Pre-SLGRP Liability

The sum of Pre-SLGRP Pooled Liabilities and Transition Liabilities.

Pre-SLGRP Pooled Liability

The difference between the total UAL and the UAL attributable to the SLGRP for a pool of employers that joined the SLGRP. There are currently two pre-SLGRP pools. One was created for State Agencies and Community Colleges when the SLGRP was formed. The other one was created when the Local Government Rate Pool joined the SLGRP.

Present Value

Sometimes called “actuarial present value,” the estimated cost (as of the valuation date) of a series of future payments. The present value is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Rate Collar

A methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution rate and funded status.

Required Supplementary Information (RSI)

Schedules, statistical data, and other information that are an essential part of financial reporting and should be presented with, but are not part of, the basic financial statements of a governmental entity.

Statement No. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions.

Statement No. 68 of the Governmental Accounting Standards Board (GASB 68)

The accounting standard governing a state or local governmental employer’s accounting for pensions for fiscal years beginning after June 15, 2014.

Statement No. 75 of the Governmental Accounting Standards Board (GASB 75)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

The difference between the total UAL and the UAL attributable to the SLGRP for an individual employer that joined the SLGRP or the Local Government Rate Pool.

Unfunded Accrued Liability (UAL)

The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. The UAL is divided by combined valuation payroll and an amortization factor to determine an initial pre-collar UAL rate. The final UAL rate can be adjusted by the rate collar.



Milliman
111 SW Fifth Avenue, Suite 3700
Portland, OR 97204-3654
503 227 0634

This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

September 2016

City of Eagle Point/2282
Oregon Public Employees Retirement System

Dear Sir or Madam:

As part of our engagement with the Oregon Public Employees Retirement Board, we performed a system-wide actuarial valuation of the Oregon Public Employees Retirement System (“PERS” or “the System”) as of December 31, 2015. The attached report, which is an informational supplement to the system-wide report, provides you with employer-specific contribution rates that will become effective July 1, 2017. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information will be provided separately by PERS and is not included in this report.

This report reflects the System's benefit provisions in effect as of December 31, 2015. The full development of the valuation results for the OPSRP and Retiree Health Insurance Account (RHIA) programs can be found in the separate system-wide actuarial valuation report. Costs of the IAP (Individual Account Program) are not included in this or the system-wide actuarial valuation report. Further, costs of pension obligation bond payments are not included in this or the system-wide actuarial valuation report.

If you have any questions about this report, please contact Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, OPSRP general service, and OPSRP police and fire payroll,
- Information to assist you in completing GASB 45 financial reporting requirements, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- Detailed development of Tier 1/Tier 2 valuation results,
- A brief summary of methods and assumptions, and
- A brief summary of any changes in System benefit provisions.

Additional information is provided in the system-wide actuarial valuation report, which is available at www.oregon.gov/PERS/Pages/section/financial_reports/financials.aspx.

September 2016
City of Eagle Point/2282

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the System's staff. This information includes, but is not limited to, System benefit provisions as defined by statute, member census data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for the System have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer a reasonable estimate of anticipated experience affecting the System.

A valuation report is only an estimate of the System's financial condition as of a single date. It can neither predict the System's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of System benefits, only the timing of System contributions. While a valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: System experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the System's funded status); and changes in System benefit provisions or applicable law. Due to the limited scope of this assignment, we did not perform an analysis of the potential range of future measurements. The Board has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in September 2015.

Some of the actuarial computations presented in this report are for purposes of determining the contribution rates effective from July 2017 to June 2019 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.



September 2016
City of Eagle Point/2282

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the System. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

Additional information is provided in the system-wide actuarial valuation report.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Larrabee".

Matt Larrabee, FSA, EA, MAAA
Principal and Consulting Actuary

A handwritten signature in black ink, appearing to read "Scott Preppernau".

Scott Preppernau, FSA, EA, MAAA
Principal and Consulting Actuary



ACTUARIAL VALUATION REPORT DECEMBER 31, 2015

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

INDEPENDENT EMPLOYERS

City of Eagle Point -- #2282

September 2016

CONTENTS

Executive Summary **1**

Employer Contribution Rates 1

Accounting Information 3

Principal Valuation Results 5

 ▪ Employer 5

 ▪ Tier 1/Tier 2 6

 ▪ OPSRP 7

 ▪ Retiree Healthcare 7

Side Account Information **8**

Tier 1/Tier 2 Valuation Results **10**

Assets 10

Liabilities 11

Unfunded Accrued Liability (UAL) 13

Contribution Rate Development 15

Data **20**

Brief Summary of Actuarial Methods and Assumptions **22**

Brief Summary of Changes in Plan Provisions **24**

Glossary **25**

Executive Summary

Milliman has prepared this report for City of Eagle Point to:

- Provide summary December 31, 2015 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2017 through June 30, 2019,
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2015, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45. GASB 68 information will be provided separately by PERS and is not included in this report.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2015 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to City of Eagle Point.

Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2017 through June 30, 2019 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

Employer Rates Effective July 1, 2017 for City of Eagle Point

	Payroll		
	Tier 1/Tier 2	OPSRP	
		General Service	Police & Fire
Pension			
Normal cost rate	17.11%	8.02%	12.79%
Tier 1/Tier 2 UAL rate ¹	0.72%	0.72%	0.72%
OPSRP UAL rate	1.27%	1.27%	1.27%
Side account rate relief	0.00%	0.00%	0.00%
Net pension contribution rate	19.10%	10.01%	14.78%
Retiree Healthcare			
Normal cost rate	0.07%	0.00%	0.00%
UAL rate	0.43%	0.43%	0.43%
Net retiree healthcare rate	0.50%	0.43%	0.43%
Total net employer contribution rate	19.60%	10.44%	15.21%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate.

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 Biennium

The rate collar limits changes in contribution rates, but does not limit changes in rates for individual employers related to side accounts. The table below shows the possible minimum and maximum rates first effective as of July 1, 2019, which will depend on the funded status as of December 31, 2017. If the employer's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2015 is 67%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	17.83%	17.83%
Minimum 2019-2021 Rate	14.26%	10.69%
Maximum 2019-2021 Rate	21.40%	24.97%

Executive Summary

Accounting Information

Milliman is not an accounting or audit firm and cannot provide accounting advice. Milliman is not responsible for the interpretation of, or compliance with, accounting standards; citations to, and descriptions of accounting standards provided in this report are for reference purposes only. The information provided in this section is intended to assist the employer in completing its financial statements, but any accounting determination should be reviewed by your auditor.

Pension

In June 2012 the GASB issued Statement No. 68, which replaced GASB 27 and governs employer financial reporting for fiscal years beginning after June 15, 2014. The new standard replaced many of the key elements of the prior reporting requirements. Under the new rules, employers are required to record a balance sheet liability for their unfunded pension obligations. In addition, the timing and coordination of plan and employer reporting has changed under the new requirements. GASB 68 information for employers will be provided separately by PERS and is not included in this report.

Schedule of Funding Progress

Under GASB 27, the Schedule of Funding Progress for Tier 1/Tier 2 pension liabilities was reported in the Required Supplementary Information. This schedule is no longer required now that GASB 68 has replaced GASB 27. However, for additional information and the sake of historical comparison, the updated schedule is shown below for the last several valuations. For employers with side accounts, the actuarial value of assets in this Schedule includes the value of the employer's side accounts.

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (b - a)	Funded Ratio (a ÷ b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a) ÷ c)
12/31/2010	\$2,057,505	\$2,442,645	\$385,140	84%	\$614,657	63%
12/31/2011	2,019,516	2,540,783	521,267	79%	689,745	76%
12/31/2012	2,240,662	2,683,723	443,061	83%	732,095	61%
12/31/2013	2,361,983	2,848,056	486,073	83%	634,485	77%
12/31/2014	2,394,813	3,386,913	992,100	71%	773,505	128%
12/31/2015	2,329,063	3,480,090	1,151,027	67%	737,638	156%

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) is a cost-sharing pool under Statement No. 45 of the Governmental Accounting Standards Board (GASB 45). Consequently, each employer reports the contractually required contribution. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 was calculated as a part of this valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
	Tier 1 / Tier 2	OPSRP	
		General Service	Police & Fire
July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern employer financial reporting for retiree healthcare obligations for fiscal years beginning after June 15, 2017. In general, the changes required by GASB 75 parallel those that occurred for pension reporting when GASB 68 replaced GASB 27. Accounting information for reporting under GASB 75 will be provided separately and is not included in this report.

Executive Summary

Principal Valuation Results

A summary of principal valuation results from the current valuation and the prior valuation follows. Any changes in actuarial assumptions, methods or plan provisions between the two valuations are described later in this report. More detailed information can be found in the system-wide actuarial valuation report.

City of Eagle Point

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
T1/T2 UAL	\$1,151,027	\$992,100
Allocated pooled OPSRP UAL	104,866	88,428
Side account	0	0
Net unfunded pension actuarial accrued liability	1,255,893	1,080,528
Combined valuation payroll	737,638	773,505
Net pension UAL as a percentage of payroll	170%	140%
Calculated side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	\$3,582	\$6,148

In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer’s combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.

Executive Summary

Principal Valuation Results (continued)

Tier 1/Tier 2

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
Normal cost	\$63,597	\$62,571
Tier 1/Tier 2 valuation payroll	371,665	368,579
Tier 1/Tier 2 pension normal cost rate	17.11%	16.98%
Tier 1/ Tier 2 Actuarial accrued liability	\$3,480,090	\$3,386,913
Actuarial asset value	2,329,063	2,394,813
Tier 1/Tier 2 Unfunded actuarial accrued liability	1,151,027	992,100
Tier 1/ Tier 2 Funded status	67%	71%
Combined valuation payroll	\$737,638	\$773,505
Tier 1/Tier 2 UAL as a percentage of payroll	156%	128%
Tier 1/Tier 2 UAL rate (includes Multnomah Fire District #10)	0.72%	(0.05%)
Tier 1/Tier 2 active members ¹	5	5
Tier 1/Tier 2 dormant members	1	1
Tier 1/Tier 2 retirees and beneficiaries	10	10

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
General service normal cost	\$342.2	\$301.3
OPSRP general service valuation payroll	4,266.9	3,720.4
General service normal cost rate	8.02%	8.10%
Police and fire normal cost	\$69.9	\$59.6
OPSRP police and fire valuation payroll	546.4	462.3
Police and fire normal cost rate	12.79%	12.90%
Actuarial accrued liability	\$3,742.5	\$3,064.1
Actuarial asset value	2,389.1	2,024.6
Unfunded actuarial accrued liability	1,353.5	1,039.5
Funded status	64%	66%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	14%	11%
UAL rate	1.27%	1.01%

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
RHIA		
Normal cost	\$3.3	\$3.5
Tier 1 / Tier 2 valuation payroll	4,730.8	4,933.1
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	\$465.6	\$468.4
Actuarial asset value	419.3	395.9
Unfunded actuarial accrued liability	46.3	72.5
Funded status	90%	85%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	0%	1%
UAL rate	0.43%	0.43%

Side Account Information

Reconciliation of Side Accounts

The following table reconciles the total side account from the beginning of the year to the end of the year. Side account transfers were calculated by PERS and made on a monthly basis. The amount of these transfers is shown in the table below.

All information in this table has been provided by PERS.

	New	Continuing	Total
1. Side account as of December 31, 2014	N/A		
2. Deposits made during 2015		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2015			
5. Side account earnings during 2015			
6. Side account as of December 31, 2015 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2015	December 31, 2014
Side account 1	\$0	\$0
Side account 2	0	0
Side account 3	0	0
Total	\$0	\$0

Development of Side Account Rate

The rate relief attributable to an employer's side account is determined by amortizing the side account balance on the valuation date over a fixed period, and expressing the result as a percentage of combined valuation payroll. For side accounts established prior to December 31, 2009, the fixed period ends December 31, 2027. For side accounts established at a later date, the fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2015	December 31, 2014
1. Total side account	\$0	\$0
2. Combined valuation payroll	737,638	773,505
3. Average Amortization factor	9.504	10.118
4. Total side account rate (-1. ÷ 2. ÷ 3.)¹	0.00%	0.00%

¹ For employers with more than one side account, the Total Side Account Rate is determined by calculating the rate on each side account separately and adding the rates together.

Tier 1/Tier 2 Valuation Results

Assets

A summary of the market value of pension assets, and reconciliation from the prior year are shown below.

Summary of Market Value of Tier 1/Tier 2 Pension Assets

	December 31, 2015	December 31, 2014
1. Member reserves	\$67,608	\$65,693
2. Employer reserves	1,151,455	1,093,876
3. Benefits in force reserve	1,110,000	1,235,244
4. Total market value of assets (1. + 2. + 3.)	\$2,329,063	\$2,394,813

The market value of member and employer reserves is provided by PERS. The benefits in force reserve provided by PERS is allocated each year among employers in proportion to their liabilities for retired members and beneficiaries.

Reconciliation of Tier 1/Tier 2 Pension Assets

	December 31, 2014 to December 31, 2015
1. Market value of assets at beginning of year	\$2,394,813
2. Regular employer contributions	36,222
3. Benefit payments and expense	(201,855)
4. Adjustments ¹	57,431
5. Interest credited	42,452
6. Total transferred from side accounts	0
7. Market value of assets at end of year (1. + 2. + 3. + 4. + 5. + 6.)	\$2,329,063

¹ Note the adjustment item above includes a reallocation of the benefits in force reserve, transfers to Multnomah Fire District #10, and other adjustments made by PERS.

Tier 1/Tier 2 Valuation Results

Liabilities

Normal Cost

The normal cost represents the value of benefits assigned to the next year of service by the actuarial cost method. If all actuarial assumptions are met, the normal cost represents the amount that would need to be contributed each year to fund plan benefits. Amounts shown below include assumed administrative expenses, which are allocated pro-rata based on normal cost.

Summary of Normal Cost by Tier/Member Classification

	December 31, 2015	December 31, 2014
Tier 1 Police & Fire	\$12,540	\$12,322
Tier 1 General Service	0	0
Tier 2 Police & Fire	51,057	50,249
Tier 2 General Service	0	0
Total	\$63,597	\$62,571

Change in Tier 1/Tier 2 Normal Cost

The following table shows the impact of the assumption, method, and plan changes on normal cost as of December 31, 2015.

	Before Changes	After Changes	Net Change
Normal Cost	\$63,597	\$63,597	\$0

Tier 1/Tier 2 Valuation Results

Liabilities

Actuarial Accrued Liability

The actuarial accrued liability represents the value of benefits allocated to service performed before the valuation date by the actuarial cost method. If all actuarial assumptions are met, the actuarial accrued liability represents the amount of assets that would need to be accumulated as of the valuation date to provide for the portion of benefits allocated to service already performed.

Summary of Actuarial Accrued Liability by Tier/Member Classification

	December 31, 2015	December 31, 2014
Active Members		
▪ Tier 1 Police & Fire	\$158,009	\$136,896
▪ Tier 1 General Service	0	0
▪ Tier 2 Police & Fire	925,378	853,675
▪ Tier 2 General Service	0	0
▪ Total Active Members	\$1,083,387	\$990,571
Dormant Members	0	0
Retired Members and Beneficiaries	2,396,703	2,396,342
Total Actuarial Accrued Liability	\$3,480,090	\$3,386,913

Change in Tier 1/Tier 2 Actuarial Accrued Liability

The following table shows the impact of the assumption, method, and plan changes on the actuarial accrued liability as of December 31, 2015.

	Before Changes	After Changes	Net Change
Actuarial Accrued Liability	\$3,480,090	\$3,480,090	\$0

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Summary of UAL

The UAL represents the difference between the assets accumulated and the liability attributed to prior years of service by the cost method.

	December 31, 2015	December 31, 2014
1. Actuarial accrued liability	\$3,480,090	\$3,386,913
2. Actuarial value of assets	2,329,063	2,394,813
3. Unfunded accrued liability (1. – 2.)	1,151,027	992,100
4. Funded percentage (2. ÷ 1.)	67%	71%
5. Combined valuation payroll	\$737,638	\$773,505
6. Unfunded accrued liability as % of combined valuation payroll (3. ÷ 5.)	156%	128%

Reconciliation of UAL Bases

Beginning with the December 31, 2013 actuarial valuation, each odd-year valuation establishes a 20-year closed-period amortization schedule for outstanding Tier 1/Tier 2 UAL amounts. Amortization schedules are calculated based on the total Tier 1/Tier 2 UAL as of that valuation date less the remaining unamortized balance of previously established Tier 1/Tier 2 UAL bases.

Amortization Base	UAL December 31, 2014	Payment	Interest	UAL December 31, 2015	Next Year's Payment
December 31, 2013	\$487,110	\$36,488	\$35,076	\$485,698	\$37,765
December 31, 2015	N/A	N/A	N/A	\$665,329	\$48,142
Total				\$1,151,027	\$85,907

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Actuarial Gain or Loss since Prior Valuation

The system-wide actuarial valuation report contains a detailed analysis of gains and losses since the last valuation. The table below shows the gain or loss for the individual employer.

1. Expected actuarial accrued liability	
a. Actuarial accrued liability at December 31, 2014	\$3,386,913
b. Normal cost at December 31, 2014 (excluding assumed expenses)	59,834
c. Benefit payments during 2015	(200,296)
d. Interest at 7.50% to December 31, 2015	248,751
e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)	3,495,202
f. Change in actuarial accrued liability due to assumption, method, and plan changes	0
g. Expected actuarial accrued liability at December 31, 2015 (e. + f.)	3,495,202
2. Actuarial accrued liability at December 31, 2015	3,480,090
3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)	15,112
4. Expected actuarial value of assets	
a. Actuarial value of assets at December 31, 2014	2,394,813
b. Contributions for 2015 ¹	36,222
c. Benefit payments and expenses during 2015	(201,855)
d. Interest at 7.50% to December 31, 2015	173,400
e. Expected actuarial value of assets at December 31, 2015 (a. + b. + c. + d.)	2,402,580
5. Actuarial value of assets at December 31, 2015	2,329,063
6. Gain/(loss) on actuarial value of assets (5. - 4.e.)	(73,517)
7. Total actuarial gain/(loss) (3. + 6.)	(\$58,405)

Unfunded Accrued Liability Reconciliation

A reconciliation of the Tier 1/Tier 2 UAL from December 31, 2014 is provided below.

1. UAL at December 31, 2014	\$992,100
2. Expected increase	100,522
3. Liability (gain)/loss	(15,112)
4. Asset (gain)/loss	73,517
5. Change due to changes in assumptions, methods, and plan provisions	0
6. UAL at December 31, 2015 (1. + 2. + 3. + 4. + 5.)	\$1,151,027

¹ Includes rate relief from side accounts.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Normal Cost Rate

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

Development of Tier 1/Tier 2 Normal Cost Rate

	December 31, 2015			December 31, 2014		
	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate
Tier 1 Police & Fire	\$12,540	\$73,148	17.14%	\$12,322	\$72,366	17.03%
Tier 1 General Service	0	0	0.00%	0	0	0.00%
Tier 2 Police & Fire	51,057	298,517	17.10%	50,249	296,213	16.96%
Tier 2 General Service	0	0	0.00%	0	0	0.00%
Total	\$63,597	\$371,665	17.11%	\$62,571	\$368,579	16.98%

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Development of Tier 1/Tier 2 UAL Rates

The UAL rate is determined by calculating the next year's scheduled payment to the UAL as a percentage of combined valuation payroll.

	December 31, 2015	December 31, 2014
1. Total Tier 1/Tier 2 UAL	\$1,151,027	\$992,100
2. Next year's Tier 1/Tier 2 UAL payment	85,907	73,029
3. Combined valuation payroll	737,638	773,505
4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)	11.65%	9.44%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	17.11%	16.98%
b. Tier 1/Tier 2 UAL rate	11.65%	9.44%
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate (a. + b. + c.)	28.91%	26.57%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Adjustments Due to Rate Collar and Minimum Rate Requirements

Employer contribution rates are generally limited to change by no more than the greater of 3 percent of payroll or 20 percent from the current contribution rate. However, if the funded percentage excluding side accounts is below 60 percent or above 140 percent the rate collar doubles in size. If the funded percentage excluding side accounts is between 60 and 70 percent or 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

The table below shows the current contribution rate for the period from July 1, 2015 through June 30, 2017, develops the maximum and minimum contribution rates effective July 1, 2017 based on the collar, and calculates the net adjustment due to the collar and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

1. Current net Tier 1/Tier 2 pension contribution rate		13.93%
2. Employer contribution rate attributable to side accounts		0.00%
3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)		13.93%
4. Size of rate collar		
a. 20% of current employer contribution rate (20% x 3.)		2.79%
b. Preliminary size of rate collar (maximum of 3% or a.)		3.00%
c. Funded percentage		67%
d. Size of rate collar (If c. < 60% or c. > 140%, 2 x b. If c. is 70%-130%, b. Otherwise, a graded rate between b. and 2 x b.)		3.90%
5. July 1, 2017 minimum employer contribution rate	(3. – 4.d. but not < 0%)	10.03%
6. July 1, 2017 maximum employer contribution rate	(3. + 4.d.)	17.83%
7. July 1, 2017 total pension rate, before adjustment		28.91%
8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)		(11.08%)
9. July 1, 2017 Tier 1/Tier 2 UAL rate, before collar		11.65%
10. July 1, 2017 Tier 1/Tier 2 UAL rate, after collar	(8. + 9.)	0.57%
11. July 1, 2017 Tier 1/Tier 2 pension rate, after collar		17.83%
12. Tier 1/Tier 2 retiree healthcare rate		0.50%
13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)		0.00%
14. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment		17.11%
15. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)		17.11%
16. July 1, 2017 Tier 1/Tier 2 pension rate, after minimum adjustment	(11. + 13.)	17.83%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Post-Rate Collar)

The table below summarizes the employer's pension contribution rate for Tier 1 /Tier 2 after adjustments for the rate collar and the 6 percent of payroll minimum employer contribution rate.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	17.11%	16.98%
b. Tier 1/Tier 2 UAL rate	0.57%	(0.20%)
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate <i>(a. + b. + c., minimum of 5.50%)</i>	17.83%	16.93%

Data

Demographic Information

Employer Valuation Payroll

	General Service	Police & Fire	Total
Tier 1	\$0	\$73,148	\$73,148
Tier 2	0	298,517	298,517
Tier 1/Tier 2 valuation payroll	0	371,665	371,665
OPSRP valuation payroll	0	365,973	365,973
Combined valuation payroll	\$0	\$737,638	\$737,638

Employer Member Census

	December 31							
	2015				2014			
	Tier 1	Tier 2	OPSRP	Total	Tier 1	Tier 2	OPSRP	Total
Active Members ¹								
General Service	0	0	0	0	0	0	0	0
Police & Fire	1	4	5	10	1	4	6	11
Total	1	4	5	10	1	4	6	11
Active Members with previous service segments with the employer								
General Service	0	0	N/A	0	0	0	N/A	0
Police & Fire	0	1	N/A	1	0	1	N/A	1
Total	0	1	N/A	1	0	1	N/A	1
Dormant Members								
General Service	0	0	0	0	0	0	0	0
Police & Fire	0	1	0	1	0	1	0	1
Total	0	1	0	1	0	1	0	1
Retired Members and Beneficiaries								
General Service	0	0	0	0	0	0	0	0
Police & Fire	9	1	0	10	9	1	0	10
Total	9	1	0	10	9	1	0	10
Grand Total Number of Members	10	7	5	22	10	7	6	23

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Data

Demographic Information (continued)

Employer Tier 1/Tier 2 Active Members as of December 31, 2015

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
<20										
20-24										
25-29										
30-34										
35-39			1							1
40-44					1					1
45-49			1	2						3
50-54										
55-59										
60-64										
65-69										
70-74										
75+										
Total	0	0	2	2	1	0	0	0	0	5

Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2015

Dormant Members			Retired Members and Beneficiaries		
Age	Count	Average Deferred Monthly Benefit	Age	Count	Average Monthly Benefit
<20			<45		
20-24			45-49		
25-29			50-54		
30-34			55-59	1	1,410
35-39			60-64	3	1,570
40-44			65-69	4	1,132
45-49	1	0	70-74	1	2,861
50-54			75-79	1	620
55-59			80-84		
60-64			85-89		
65-69			90-94		
70-74			95-99		
75+			100+		
Total	1	0	Total	10	1,413

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2015 valuation can be found in the system-wide actuarial valuation report.

Actuarial Methods and Valuation Procedures

A brief summary of the methods used in this valuation is shown below:

<i>Actuarial cost method</i>	Entry Age Normal.
<i>Amortization Method</i>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. Gains and losses between subsequent odd-year valuations will be amortized as a level percentage of projected combined valuation payroll over a closed 20 year period.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.</p>

Economic Assumptions

A brief summary of the key economic assumptions used in this valuation is shown below:

<i>Net investment return</i>	7.50% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.50% compounded annually on members' regular account balances.</p> <p>7.50% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 6.3% in 2016 to 4.4% in 2094.
<i>Administrative Expenses</i>	<p>\$5.5 million added to OPSRP normal cost.</p> <p>\$33.0 million added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2014 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

There were no changes in actuarial methods and allocation procedures since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA actuarial methods and allocation procedures is provided as part of the system-wide valuation report.

Changes in Assumptions

There were no changes in assumptions since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA assumptions is provided as part of the system-wide valuation report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Glossary

Actuarial Accrued Liability

The portion of the present value of prospective benefits allocated to service and compensation before the valuation date in accordance with the actuarial cost method.

Actuarial Asset Value

The value of assets used in calculating the required contributions. The actuarial asset value may be equal to the fair market value of assets, or it may spread the recognition of certain investment gains or losses over a period of years in accordance with an asset valuation method.

Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disablement and retirement; rates of investment earnings and other relevant items.

Actuarial Cost Method

Sometimes called “funding method,” a particular technique used by actuaries to establish the amount and incidence of the annual actuarial cost of pension plan benefits, or normal cost, and the related unfunded actuarial accrued liability. Ordinarily, the annual contribution to the plan comprises the normal cost and an amount for amortization of the unfunded actuarial accrued liability.

Actuarial Gain or (Loss)

A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions, during the period between two actuarial valuation dates, as determined in accordance with a particular actuarial cost method.

Combined Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for both Tier 1/Tier 2 and OPSRP active members. This payroll is used to calculate UAL rates.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

Employer Contribution Rate

Consists of the normal cost rate and the UAL rates, plus adjustments for other items such as side account rate offsets.

Funded Status

The actuarial value of assets expressed as a percentage of the actuarial accrued liability.

Normal Cost

The annual cost allocated to the current year, under the actuarial cost method in use. The normal cost divided by the applicable payroll is the normal cost rate.

OPSRP Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for OPSRP active members. This payroll is used to calculate OPSRP normal cost rates.

Glossary

Pre-SLGRP Liability

The sum of Pre-SLGRP Pooled Liabilities and Transition Liabilities.

Pre-SLGRP Pooled Liability

The difference between the total UAL and the UAL attributable to the SLGRP for a pool of employers that joined the SLGRP. There are currently two pre-SLGRP pools. One was created for State Agencies and Community Colleges when the SLGRP was formed. The other one was created when the Local Government Rate Pool joined the SLGRP.

Present Value

Sometimes called “actuarial present value,” the estimated cost (as of the valuation date) of a series of future payments. The present value is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Rate Collar

A methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution rate and funded status.

Required Supplementary Information (RSI)

Schedules, statistical data, and other information that are an essential part of financial reporting and should be presented with, but are not part of, the basic financial statements of a governmental entity.

Statement No. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions.

Statement No. 68 of the Governmental Accounting Standards Board (GASB 68)

The accounting standard governing a state or local governmental employer’s accounting for pensions for fiscal years beginning after June 15, 2014.

Statement No. 75 of the Governmental Accounting Standards Board (GASB 75)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

The difference between the total UAL and the UAL attributable to the SLGRP for an individual employer that joined the SLGRP or the Local Government Rate Pool.

Unfunded Accrued Liability (UAL)

The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. The UAL is divided by combined valuation payroll and an amortization factor to determine an initial pre-collar UAL rate. The final UAL rate can be adjusted by the rate collar.



Milliman
111 SW Fifth Avenue, Suite 3700
Portland, OR 97204-3654
503 227 0634

This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

September 2016

East Fork Irrigation District/2529
Oregon Public Employees Retirement System

Dear Sir or Madam:

As part of our engagement with the Oregon Public Employees Retirement Board, we performed a system-wide actuarial valuation of the Oregon Public Employees Retirement System (“PERS” or “the System”) as of December 31, 2015. The attached report, which is an informational supplement to the system-wide report, provides you with employer-specific contribution rates that will become effective July 1, 2017. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information will be provided separately by PERS and is not included in this report.

This report reflects the System's benefit provisions in effect as of December 31, 2015. The full development of the valuation results for the OPSRP and Retiree Health Insurance Account (RHIA) programs can be found in the separate system-wide actuarial valuation report. Costs of the IAP (Individual Account Program) are not included in this or the system-wide actuarial valuation report. Further, costs of pension obligation bond payments are not included in this or the system-wide actuarial valuation report.

If you have any questions about this report, please contact Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, OPSRP general service, and OPSRP police and fire payroll,
- Information to assist you in completing GASB 45 financial reporting requirements, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- Detailed development of Tier 1/Tier 2 valuation results,
- A brief summary of methods and assumptions, and
- A brief summary of any changes in System benefit provisions.

Additional information is provided in the system-wide actuarial valuation report, which is available at www.oregon.gov/PERS/Pages/section/financial_reports/financials.aspx.



September 2016
East Fork Irrigation District/2529

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the System's staff. This information includes, but is not limited to, System benefit provisions as defined by statute, member census data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for the System have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer a reasonable estimate of anticipated experience affecting the System.

A valuation report is only an estimate of the System's financial condition as of a single date. It can neither predict the System's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of System benefits, only the timing of System contributions. While a valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: System experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the System's funded status); and changes in System benefit provisions or applicable law. Due to the limited scope of this assignment, we did not perform an analysis of the potential range of future measurements. The Board has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in September 2015.

Some of the actuarial computations presented in this report are for purposes of determining the contribution rates effective from July 2017 to June 2019 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.



September 2016
East Fork Irrigation District/2529

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the System. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

Additional information is provided in the system-wide actuarial valuation report.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Larrabee".

Matt Larrabee, FSA, EA, MAAA
Principal and Consulting Actuary

A handwritten signature in black ink, appearing to read "Scott Preppernau".

Scott Preppernau, FSA, EA, MAAA
Principal and Consulting Actuary



ACTUARIAL VALUATION REPORT DECEMBER 31, 2015

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

INDEPENDENT EMPLOYERS

East Fork Irrigation District -- #2529

September 2016

CONTENTS

Executive Summary **1**

Employer Contribution Rates 1

Accounting Information 3

Principal Valuation Results 5

 ▪ Employer 5

 ▪ Tier 1/Tier 2 6

 ▪ OPSRP 7

 ▪ Retiree Healthcare 7

Side Account Information **8**

Tier 1/Tier 2 Valuation Results **10**

Assets 10

Liabilities 11

Unfunded Accrued Liability (UAL) 13

Contribution Rate Development 15

Data **20**

Brief Summary of Actuarial Methods and Assumptions **22**

Brief Summary of Changes in Plan Provisions **24**

Glossary **25**

Executive Summary

Milliman has prepared this report for East Fork Irrigation District to:

- Provide summary December 31, 2015 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2017 through June 30, 2019,
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2015, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45. GASB 68 information will be provided separately by PERS and is not included in this report.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2015 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to East Fork Irrigation District.

Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2017 through June 30, 2019 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

Employer Rates Effective July 1, 2017 for East Fork Irrigation District

	Payroll		
	Tier 1/Tier 2	OPSRP General Service	OPSRP Police & Fire
Pension			
Normal cost rate	20.76%	8.02%	12.79%
Tier 1/Tier 2 UAL rate ¹	(8.47%)	(8.47%)	(8.47%)
OPSRP UAL rate	1.27%	1.27%	1.27%
Side account rate relief	0.00%	0.00%	0.00%
Net pension contribution rate	13.56%	0.82%	5.59%
Retiree Healthcare			
Normal cost rate	0.07%	0.00%	0.00%
UAL rate	0.43%	0.43%	0.43%
Net retiree healthcare rate	0.50%	0.43%	0.43%
Total net employer contribution rate	14.06%	1.25%	6.02%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate.

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 Biennium

The rate collar limits changes in contribution rates, but does not limit changes in rates for individual employers related to side accounts. The table below shows the possible minimum and maximum rates first effective as of July 1, 2019, which will depend on the funded status as of December 31, 2017. If the employer's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2015 is 95%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	12.29%	12.29%
Minimum 2019-2021 Rate	9.29%	6.29%
Maximum 2019-2021 Rate	15.29%	18.29%

Executive Summary

Accounting Information

Milliman is not an accounting or audit firm and cannot provide accounting advice. Milliman is not responsible for the interpretation of, or compliance with, accounting standards; citations to, and descriptions of accounting standards provided in this report are for reference purposes only. The information provided in this section is intended to assist the employer in completing its financial statements, but any accounting determination should be reviewed by your auditor.

Pension

In June 2012 the GASB issued Statement No. 68, which replaced GASB 27 and governs employer financial reporting for fiscal years beginning after June 15, 2014. The new standard replaced many of the key elements of the prior reporting requirements. Under the new rules, employers are required to record a balance sheet liability for their unfunded pension obligations. In addition, the timing and coordination of plan and employer reporting has changed under the new requirements. GASB 68 information for employers will be provided separately by PERS and is not included in this report.

Schedule of Funding Progress

Under GASB 27, the Schedule of Funding Progress for Tier 1/Tier 2 pension liabilities was reported in the Required Supplementary Information. This schedule is no longer required now that GASB 68 has replaced GASB 27. However, for additional information and the sake of historical comparison, the updated schedule is shown below for the last several valuations. For employers with side accounts, the actuarial value of assets in this Schedule includes the value of the employer's side accounts.

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (b - a)	Funded Ratio (a ÷ b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a) ÷ c)
12/31/2010	\$1,316,959	\$1,352,279	\$35,320	97%	\$243,351	15%
12/31/2011	1,369,662	1,464,619	94,957	94%	247,525	38%
12/31/2012	1,574,498	1,451,273	(123,225)	108%	253,094	(49%)
12/31/2013	1,797,235	1,558,241	(238,994)	115%	261,005	(92%)
12/31/2014	1,934,328	1,826,051	(108,277)	106%	286,685	(38%)
12/31/2015	1,976,598	2,080,117	103,519	95%	247,706	42%

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) is a cost-sharing pool under Statement No. 45 of the Governmental Accounting Standards Board (GASB 45). Consequently, each employer reports the contractually required contribution. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 was calculated as a part of this valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
	Tier 1 / Tier 2	OPSRP	
		General Service	Police & Fire
July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern employer financial reporting for retiree healthcare obligations for fiscal years beginning after June 15, 2017. In general, the changes required by GASB 75 parallel those that occurred for pension reporting when GASB 68 replaced GASB 27. Accounting information for reporting under GASB 75 will be provided separately and is not included in this report.

Executive Summary

Principal Valuation Results

A summary of principal valuation results from the current valuation and the prior valuation follows. Any changes in actuarial assumptions, methods or plan provisions between the two valuations are described later in this report. More detailed information can be found in the system-wide actuarial valuation report.

East Fork Irrigation District

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
T1/T2 UAL	\$103,519	(\$108,277)
Allocated pooled OPSRP UAL	35,215	32,774
Side account	0	0
Net unfunded pension actuarial accrued liability	138,734	(75,503)
Combined valuation payroll	247,706	286,685
Net pension UAL as a percentage of payroll	56%	(26%)
Calculated side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	\$1,203	\$2,279

In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer’s combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.

Executive Summary

Principal Valuation Results (continued)

Tier 1/Tier 2

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
Normal cost	\$41,581	\$49,551
Tier 1/Tier 2 valuation payroll	200,255	260,236
Tier 1/Tier 2 pension normal cost rate	20.76%	19.04%
Tier 1/ Tier 2 Actuarial accrued liability	\$2,080,117	\$1,826,051
Actuarial asset value	1,976,598	1,934,328
Tier 1/Tier 2 Unfunded actuarial accrued liability	103,519	(108,277)
Tier 1/ Tier 2 Funded status	95%	106%
Combined valuation payroll	\$247,706	\$286,685
Tier 1/Tier 2 UAL as a percentage of payroll	42%	(38%)
Tier 1/Tier 2 UAL rate (includes Multnomah Fire District #10)	(8.47%)	(6.75%)
Tier 1/Tier 2 active members ¹	4	6
Tier 1/Tier 2 dormant members	3	2
Tier 1/Tier 2 retirees and beneficiaries	5	4

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
General service normal cost	\$342.2	\$301.3
OPSRP general service valuation payroll	4,266.9	3,720.4
General service normal cost rate	8.02%	8.10%
Police and fire normal cost	\$69.9	\$59.6
OPSRP police and fire valuation payroll	546.4	462.3
Police and fire normal cost rate	12.79%	12.90%
Actuarial accrued liability	\$3,742.5	\$3,064.1
Actuarial asset value	2,389.1	2,024.6
Unfunded actuarial accrued liability	1,353.5	1,039.5
Funded status	64%	66%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	14%	11%
UAL rate	1.27%	1.01%

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
RHIA		
Normal cost	\$3.3	\$3.5
Tier 1 / Tier 2 valuation payroll	4,730.8	4,933.1
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	\$465.6	\$468.4
Actuarial asset value	419.3	395.9
Unfunded actuarial accrued liability	46.3	72.5
Funded status	90%	85%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	0%	1%
UAL rate	0.43%	0.43%

Side Account Information

Reconciliation of Side Accounts

The following table reconciles the total side account from the beginning of the year to the end of the year. Side account transfers were calculated by PERS and made on a monthly basis. The amount of these transfers is shown in the table below.

All information in this table has been provided by PERS.

	New	Continuing	Total
1. Side account as of December 31, 2014	N/A		
2. Deposits made during 2015		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2015			
5. Side account earnings during 2015			
6. Side account as of December 31, 2015 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2015	December 31, 2014
Side account 1	\$0	\$0
Side account 2	0	0
Side account 3	0	0
Total	\$0	\$0

Development of Side Account Rate

The rate relief attributable to an employer's side account is determined by amortizing the side account balance on the valuation date over a fixed period, and expressing the result as a percentage of combined valuation payroll. For side accounts established prior to December 31, 2009, the fixed period ends December 31, 2027. For side accounts established at a later date, the fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2015	December 31, 2014
1. Total side account	\$0	\$0
2. Combined valuation payroll	247,706	286,685
3. Average Amortization factor	9.504	10.118
4. Total side account rate (-1. ÷ 2. ÷ 3.)¹	0.00%	0.00%

¹ For employers with more than one side account, the Total Side Account Rate is determined by calculating the rate on each side account separately and adding the rates together.

Tier 1/Tier 2 Valuation Results

Assets

A summary of the market value of pension assets, and reconciliation from the prior year are shown below.

Summary of Market Value of Tier 1/Tier 2 Pension Assets

	December 31, 2015	December 31, 2014
1. Member reserves	\$693,648	\$637,757
2. Employer reserves	1,121,787	1,210,277
3. Benefits in force reserve	161,163	86,294
4. Total market value of assets (1. + 2. + 3.)	\$1,976,598	\$1,934,328

The market value of member and employer reserves is provided by PERS. The benefits in force reserve provided by PERS is allocated each year among employers in proportion to their liabilities for retired members and beneficiaries.

Reconciliation of Tier 1/Tier 2 Pension Assets

	December 31, 2014 to December 31, 2015
1. Market value of assets at beginning of year	\$1,934,328
2. Regular employer contributions	7,707
3. Benefit payments and expense	(29,308)
4. Adjustments ¹	(8,156)
5. Interest credited	72,027
6. Total transferred from side accounts	0
7. Market value of assets at end of year (1. + 2. + 3. + 4. + 5. + 6.)	\$1,976,598

¹ Note the adjustment item above includes a reallocation of the benefits in force reserve, transfers to Multnomah Fire District #10, and other adjustments made by PERS.

Tier 1/Tier 2 Valuation Results

Liabilities

Normal Cost

The normal cost represents the value of benefits assigned to the next year of service by the actuarial cost method. If all actuarial assumptions are met, the normal cost represents the amount that would need to be contributed each year to fund plan benefits. Amounts shown below include assumed administrative expenses, which are allocated pro-rata based on normal cost.

Summary of Normal Cost by Tier/Member Classification

	December 31, 2015	December 31, 2014
Tier 1 Police & Fire	\$0	\$0
Tier 1 General Service	29,999	28,080
Tier 2 Police & Fire	0	0
Tier 2 General Service	11,582	21,471
Total	\$41,581	\$49,551

Change in Tier 1/Tier 2 Normal Cost

The following table shows the impact of the assumption, method, and plan changes on normal cost as of December 31, 2015.

	Before Changes	After Changes	Net Change
Normal Cost	\$41,581	\$41,581	\$0

Tier 1/Tier 2 Valuation Results

Liabilities

Actuarial Accrued Liability

The actuarial accrued liability represents the value of benefits allocated to service performed before the valuation date by the actuarial cost method. If all actuarial assumptions are met, the actuarial accrued liability represents the amount of assets that would need to be accumulated as of the valuation date to provide for the portion of benefits allocated to service already performed.

Summary of Actuarial Accrued Liability by Tier/Member Classification

	December 31, 2015	December 31, 2014
Active Members		
▪ Tier 1 Police & Fire	\$0	\$0
▪ Tier 1 General Service	1,142,941	988,978
▪ Tier 2 Police & Fire	0	0
▪ Tier 2 General Service	226,455	410,208
▪ Total Active Members	\$1,369,396	\$1,399,186
Dormant Members	362,738	259,456
Retired Members and Beneficiaries	347,983	167,409
Total Actuarial Accrued Liability	\$2,080,117	\$1,826,051

Change in Tier 1/Tier 2 Actuarial Accrued Liability

The following table shows the impact of the assumption, method, and plan changes on the actuarial accrued liability as of December 31, 2015.

	Before Changes	After Changes	Net Change
Actuarial Accrued Liability	\$2,080,117	\$2,080,117	\$0

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Summary of UAL

The UAL represents the difference between the assets accumulated and the liability attributed to prior years of service by the cost method.

	December 31, 2015	December 31, 2014
1. Actuarial accrued liability	\$2,080,117	\$1,826,051
2. Actuarial value of assets	1,976,598	1,934,328
3. Unfunded accrued liability (1. – 2.)	103,519	(108,277)
4. Funded percentage (2. ÷ 1.)	95%	106%
5. Combined valuation payroll	\$247,706	\$286,685
6. Unfunded accrued liability as % of combined valuation payroll (3. ÷ 5.)	42%	(38%)

Reconciliation of UAL Bases

Beginning with the December 31, 2013 actuarial valuation, each odd-year valuation establishes a 20-year closed-period amortization schedule for outstanding Tier 1/Tier 2 UAL amounts. Amortization schedules are calculated based on the total Tier 1/Tier 2 UAL as of that valuation date less the remaining unamortized balance of previously established Tier 1/Tier 2 UAL bases.

Amortization Base	UAL December 31, 2014	Payment	Interest	UAL December 31, 2015	Next Year's Payment
December 31, 2013	(\$239,504)	(\$17,940)	(\$17,246)	(\$238,810)	(\$18,569)
December 31, 2015	N/A	N/A	N/A	\$342,329	\$24,771
Total				\$103,519	\$6,202

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Actuarial Gain or Loss since Prior Valuation

The system-wide actuarial valuation report contains a detailed analysis of gains and losses since the last valuation. The table below shows the gain or loss for the individual employer.

1. Expected actuarial accrued liability	
a. Actuarial accrued liability at December 31, 2014	\$1,826,051
b. Normal cost at December 31, 2014 (excluding assumed expenses)	47,400
c. Benefit payments during 2015	(29,081)
d. Interest at 7.50% to December 31, 2015	137,641
e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)	1,982,011
f. Change in actuarial accrued liability due to assumption, method, and plan changes	0
g. Expected actuarial accrued liability at December 31, 2015 (e. + f.)	1,982,011
2. Actuarial accrued liability at December 31, 2015	2,080,117
3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)	(98,106)
4. Expected actuarial value of assets	
a. Actuarial value of assets at December 31, 2014	1,934,328
b. Contributions for 2015 ¹	7,707
c. Benefit payments and expenses during 2015	(29,308)
d. Interest at 7.50% to December 31, 2015	144,265
e. Expected actuarial value of assets at December 31, 2015 (a. + b. + c. + d.)	2,056,992
5. Actuarial value of assets at December 31, 2015	1,976,598
6. Gain/(loss) on actuarial value of assets (5. - 4.e.)	(80,394)
7. Total actuarial gain/(loss) (3. + 6.)	(\$178,500)

Unfunded Accrued Liability Reconciliation

A reconciliation of the Tier 1/Tier 2 UAL from December 31, 2014 is provided below.

1. UAL at December 31, 2014	(\$108,277)
2. Expected increase	33,296
3. Liability (gain)/loss	98,106
4. Asset (gain)/loss	80,394
5. Change due to changes in assumptions, methods, and plan provisions	0
6. UAL at December 31, 2015 (1. + 2. + 3. + 4. + 5.)	\$103,519

¹ Includes rate relief from side accounts.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Normal Cost Rate

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

Development of Tier 1/Tier 2 Normal Cost Rate

	December 31, 2015			December 31, 2014		
	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate
Tier 1 Police & Fire	\$0	\$0	0.00%	\$0	\$0	0.00%
Tier 1 General Service	29,999	120,774	24.84%	28,080	118,068	23.78%
Tier 2 Police & Fire	0	0	0.00%	0	0	0.00%
Tier 2 General Service	11,582	79,481	14.57%	21,471	142,168	15.10%
Total	\$41,581	\$200,255	20.76%	\$49,551	\$260,236	19.04%

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Development of Tier 1/Tier 2 UAL Rates

The UAL rate is determined by calculating the next year's scheduled payment to the UAL as a percentage of combined valuation payroll.

	December 31, 2015	December 31, 2014
1. Total Tier 1/Tier 2 UAL	\$103,519	(\$108,277)
2. Next year's Tier 1/Tier 2 UAL payment	6,202	(8,445)
3. Combined valuation payroll	247,706	286,685
4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)	2.50%	(2.95%)

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	20.76%	19.04%
b. Tier 1/Tier 2 UAL rate	2.50%	(2.95%)
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate (a. + b. + c.)	23.41%	16.24%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Adjustments Due to Rate Collar and Minimum Rate Requirements

Employer contribution rates are generally limited to change by no more than the greater of 3 percent of payroll or 20 percent from the current contribution rate. However, if the funded percentage excluding side accounts is below 60 percent or above 140 percent the rate collar doubles in size. If the funded percentage excluding side accounts is between 60 and 70 percent or 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

The table below shows the current contribution rate for the period from July 1, 2015 through June 30, 2017, develops the maximum and minimum contribution rates effective July 1, 2017 based on the collar, and calculates the net adjustment due to the collar and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

1. Current net Tier 1/Tier 2 pension contribution rate		9.29%
2. Employer contribution rate attributable to side accounts		0.00%
3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)		9.29%
4. Size of rate collar		
a. 20% of current employer contribution rate (20% x 3.)		1.86%
b. Preliminary size of rate collar (maximum of 3% or a.)		3.00%
c. Funded percentage		95%
d. Size of rate collar (If c. < 60% or c. > 140%, 2 x b. If c. is 70%-130%, b. Otherwise, a graded rate between b. and 2 x b.)		3.00%
5. July 1, 2017 minimum employer contribution rate	(3. – 4.d. but not < 0%)	6.29%
6. July 1, 2017 maximum employer contribution rate	(3. + 4.d.)	12.29%
7. July 1, 2017 total pension rate, before adjustment		23.41%
8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)		(11.12%)
9. July 1, 2017 Tier 1/Tier 2 UAL rate, before collar		2.50%
10. July 1, 2017 Tier 1/Tier 2 UAL rate, after collar	(8. + 9.)	(8.62%)
11. July 1, 2017 Tier 1/Tier 2 pension rate, after collar		12.29%
12. Tier 1/Tier 2 retiree healthcare rate		0.50%
13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)		0.00%
14. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment		20.76%
15. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)		20.76%
16. July 1, 2017 Tier 1/Tier 2 pension rate, after minimum adjustment	(11. + 13.)	12.29%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Post-Rate Collar)

The table below summarizes the employer's pension contribution rate for Tier 1 /Tier 2 after adjustments for the rate collar and the 6 percent of payroll minimum employer contribution rate.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	20.76%	19.04%
b. Tier 1/Tier 2 UAL rate	(8.62%)	(6.90%)
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate <i>(a. + b. + c., minimum of 5.50%)</i>	12.29%	12.29%

Data

Demographic Information

Employer Valuation Payroll

	General Service	Police & Fire	Total
Tier 1	\$120,774	\$0	\$120,774
Tier 2	79,481	0	79,481
Tier 1/Tier 2 valuation payroll	200,255	0	200,255
OPSRP valuation payroll	47,451	0	47,451
Combined valuation payroll	\$247,706	\$0	\$247,706

Employer Member Census

	December 31							
	2015				2014			
	Tier 1	Tier 2	OPSRP	Total	Tier 1	Tier 2	OPSRP	Total
Active Members ¹								
General Service	2	2	2	6	2	4	2	8
Police & Fire	0	0	0	0	0	0	0	0
Total	2	2	2	6	2	4	2	8
Active Members with previous service segments with the employer								
General Service	2	0	N/A	2	2	0	N/A	2
Police & Fire	0	0	N/A	0	0	0	N/A	0
Total	2	0	N/A	2	2	0	N/A	2
Dormant Members								
General Service	2	1	0	3	2	0	0	2
Police & Fire	0	0	0	0	0	0	0	0
Total	2	1	0	3	2	0	0	2
Retired Members and Beneficiaries								
General Service	4	1	0	5	4	0	0	4
Police & Fire	0	0	0	0	0	0	0	0
Total	4	1	0	5	4	0	0	4
Grand Total Number of Members	10	4	2	16	10	4	2	16

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Data

Demographic Information (continued)

Employer Tier 1/Tier 2 Active Members as of December 31, 2015

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
<20										
20-24										
25-29										
30-34										
35-39										
40-44										
45-49										
50-54				1						1
55-59					1					1
60-64								1		1
65-69				1						1
70-74										
75+										
Total	0	0	0	2	1	0	0	1	0	4

Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2015

Dormant Members			Retired Members and Beneficiaries		
Age	Count	Average Deferred Monthly Benefit	Age	Count	Average Monthly Benefit
<20			<45		
20-24			45-49		
25-29			50-54		
30-34			55-59		
35-39			60-64	1	1,110
40-44			65-69		
45-49			70-74		
50-54	1	1,926	75-79	1	80
55-59			80-84	2	644
60-64	2	445	85-89	1	659
65-69			90-94		
70-74			95-99		
75+			100+		
Total	3	938	Total	5	627

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2015 valuation can be found in the system-wide actuarial valuation report.

Actuarial Methods and Valuation Procedures

A brief summary of the methods used in this valuation is shown below:

<i>Actuarial cost method</i>	Entry Age Normal.
<i>Amortization Method</i>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. Gains and losses between subsequent odd-year valuations will be amortized as a level percentage of projected combined valuation payroll over a closed 20 year period.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.</p>

Economic Assumptions

A brief summary of the key economic assumptions used in this valuation is shown below:

<i>Net investment return</i>	7.50% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.50% compounded annually on members' regular account balances.</p> <p>7.50% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 6.3% in 2016 to 4.4% in 2094.
<i>Administrative Expenses</i>	<p>\$5.5 million added to OPSRP normal cost.</p> <p>\$33.0 million added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2014 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

There were no changes in actuarial methods and allocation procedures since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA actuarial methods and allocation procedures is provided as part of the system-wide valuation report.

Changes in Assumptions

There were no changes in assumptions since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA assumptions is provided as part of the system-wide valuation report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Glossary

Actuarial Accrued Liability

The portion of the present value of prospective benefits allocated to service and compensation before the valuation date in accordance with the actuarial cost method.

Actuarial Asset Value

The value of assets used in calculating the required contributions. The actuarial asset value may be equal to the fair market value of assets, or it may spread the recognition of certain investment gains or losses over a period of years in accordance with an asset valuation method.

Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disablement and retirement; rates of investment earnings and other relevant items.

Actuarial Cost Method

Sometimes called “funding method,” a particular technique used by actuaries to establish the amount and incidence of the annual actuarial cost of pension plan benefits, or normal cost, and the related unfunded actuarial accrued liability. Ordinarily, the annual contribution to the plan comprises the normal cost and an amount for amortization of the unfunded actuarial accrued liability.

Actuarial Gain or (Loss)

A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions, during the period between two actuarial valuation dates, as determined in accordance with a particular actuarial cost method.

Combined Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for both Tier 1/Tier 2 and OPSRP active members. This payroll is used to calculate UAL rates.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

Employer Contribution Rate

Consists of the normal cost rate and the UAL rates, plus adjustments for other items such as side account rate offsets.

Funded Status

The actuarial value of assets expressed as a percentage of the actuarial accrued liability.

Normal Cost

The annual cost allocated to the current year, under the actuarial cost method in use. The normal cost divided by the applicable payroll is the normal cost rate.

OPSRP Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for OPSRP active members. This payroll is used to calculate OPSRP normal cost rates.

Glossary

Pre-SLGRP Liability

The sum of Pre-SLGRP Pooled Liabilities and Transition Liabilities.

Pre-SLGRP Pooled Liability

The difference between the total UAL and the UAL attributable to the SLGRP for a pool of employers that joined the SLGRP. There are currently two pre-SLGRP pools. One was created for State Agencies and Community Colleges when the SLGRP was formed. The other one was created when the Local Government Rate Pool joined the SLGRP.

Present Value

Sometimes called “actuarial present value,” the estimated cost (as of the valuation date) of a series of future payments. The present value is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Rate Collar

A methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution rate and funded status.

Required Supplementary Information (RSI)

Schedules, statistical data, and other information that are an essential part of financial reporting and should be presented with, but are not part of, the basic financial statements of a governmental entity.

Statement No. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions.

Statement No. 68 of the Governmental Accounting Standards Board (GASB 68)

The accounting standard governing a state or local governmental employer’s accounting for pensions for fiscal years beginning after June 15, 2014.

Statement No. 75 of the Governmental Accounting Standards Board (GASB 75)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

The difference between the total UAL and the UAL attributable to the SLGRP for an individual employer that joined the SLGRP or the Local Government Rate Pool.

Unfunded Accrued Liability (UAL)

The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. The UAL is divided by combined valuation payroll and an amortization factor to determine an initial pre-collar UAL rate. The final UAL rate can be adjusted by the rate collar.



Milliman
111 SW Fifth Avenue, Suite 3700
Portland, OR 97204-3654
503 227 0634

This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

September 2016

Estacada Cemetery District/2618
Oregon Public Employees Retirement System

Dear Sir or Madam:

As part of our engagement with the Oregon Public Employees Retirement Board, we performed a system-wide actuarial valuation of the Oregon Public Employees Retirement System (“PERS” or “the System”) as of December 31, 2015. The attached report, which is an informational supplement to the system-wide report, provides you with employer-specific contribution rates that will become effective July 1, 2017. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information will be provided separately by PERS and is not included in this report.

This report reflects the System's benefit provisions in effect as of December 31, 2015. The full development of the valuation results for the OPSRP and Retiree Health Insurance Account (RHIA) programs can be found in the separate system-wide actuarial valuation report. Costs of the IAP (Individual Account Program) are not included in this or the system-wide actuarial valuation report. Further, costs of pension obligation bond payments are not included in this or the system-wide actuarial valuation report.

If you have any questions about this report, please contact Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, OPSRP general service, and OPSRP police and fire payroll,
- Information to assist you in completing GASB 45 financial reporting requirements, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- Detailed development of Tier 1/Tier 2 valuation results,
- A brief summary of methods and assumptions, and
- A brief summary of any changes in System benefit provisions.

Additional information is provided in the system-wide actuarial valuation report, which is available at www.oregon.gov/PERS/Pages/section/financial_reports/financials.aspx.



September 2016
Estacada Cemetery District/2618

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the System's staff. This information includes, but is not limited to, System benefit provisions as defined by statute, member census data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for the System have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer a reasonable estimate of anticipated experience affecting the System.

A valuation report is only an estimate of the System's financial condition as of a single date. It can neither predict the System's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of System benefits, only the timing of System contributions. While a valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: System experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the System's funded status); and changes in System benefit provisions or applicable law. Due to the limited scope of this assignment, we did not perform an analysis of the potential range of future measurements. The Board has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in September 2015.

Some of the actuarial computations presented in this report are for purposes of determining the contribution rates effective from July 2017 to June 2019 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.



September 2016
Estacada Cemetery District/2618

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the System. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

Additional information is provided in the system-wide actuarial valuation report.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Larrabee".

Matt Larrabee, FSA, EA, MAAA
Principal and Consulting Actuary

A handwritten signature in black ink, appearing to read "Scott Preppernau".

Scott Preppernau, FSA, EA, MAAA
Principal and Consulting Actuary



ACTUARIAL VALUATION REPORT DECEMBER 31, 2015

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

INDEPENDENT EMPLOYERS

Estacada Cemetery District -- #2618

September 2016

CONTENTS

Executive Summary **1**

Employer Contribution Rates 1

Accounting Information 3

Principal Valuation Results 5

 ▪ Employer 5

 ▪ Tier 1/Tier 2 6

 ▪ OPSRP 7

 ▪ Retiree Healthcare 7

Side Account Information **8**

Tier 1/Tier 2 Valuation Results **10**

Assets 10

Liabilities 11

Unfunded Accrued Liability (UAL) 13

Contribution Rate Development 15

Data **20**

Brief Summary of Actuarial Methods and Assumptions **22**

Brief Summary of Changes in Plan Provisions **24**

Glossary **25**

Executive Summary

Milliman has prepared this report for Estacada Cemetery District to:

- Provide summary December 31, 2015 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2017 through June 30, 2019,
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2015, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45. GASB 68 information will be provided separately by PERS and is not included in this report.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2015 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Estacada Cemetery District.

Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2017 through June 30, 2019 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

Employer Rates Effective July 1, 2017 for Estacada Cemetery District

	Payroll		
	Tier 1/Tier 2	OPSRP	
		General Service	Police & Fire
Pension			
Normal cost rate	21.22%	8.02%	12.79%
Tier 1/Tier 2 UAL rate ¹	(15.72%)	(15.72%)	(15.72%)
OPSRP UAL rate	1.27%	1.27%	1.27%
Side account rate relief	0.00%	0.00%	0.00%
Net pension contribution rate	6.77%	0.00%	0.00%
Retiree Healthcare			
Normal cost rate	0.07%	0.00%	0.00%
UAL rate	0.43%	0.43%	0.43%
Net retiree healthcare rate	0.50%	0.43%	0.43%
Total net employer contribution rate	7.27%	0.43%	0.43%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate.

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 Biennium

The rate collar limits changes in contribution rates, but does not limit changes in rates for individual employers related to side accounts. The table below shows the possible minimum and maximum rates first effective as of July 1, 2019, which will depend on the funded status as of December 31, 2017. If the employer's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2015 is 380%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	5.50%	5.50%
Minimum 2019-2021 Rate	2.50%	0.00%
Maximum 2019-2021 Rate	8.50%	11.50%

Executive Summary

Accounting Information

Milliman is not an accounting or audit firm and cannot provide accounting advice. Milliman is not responsible for the interpretation of, or compliance with, accounting standards; citations to, and descriptions of accounting standards provided in this report are for reference purposes only. The information provided in this section is intended to assist the employer in completing its financial statements, but any accounting determination should be reviewed by your auditor.

Pension

In June 2012 the GASB issued Statement No. 68, which replaced GASB 27 and governs employer financial reporting for fiscal years beginning after June 15, 2014. The new standard replaced many of the key elements of the prior reporting requirements. Under the new rules, employers are required to record a balance sheet liability for their unfunded pension obligations. In addition, the timing and coordination of plan and employer reporting has changed under the new requirements. GASB 68 information for employers will be provided separately by PERS and is not included in this report.

Schedule of Funding Progress

Under GASB 27, the Schedule of Funding Progress for Tier 1/Tier 2 pension liabilities was reported in the Required Supplementary Information. This schedule is no longer required now that GASB 68 has replaced GASB 27. However, for additional information and the sake of historical comparison, the updated schedule is shown below for the last several valuations. For employers with side accounts, the actuarial value of assets in this Schedule includes the value of the employer's side accounts.

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (b - a)	Funded Ratio (a ÷ b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a) ÷ c)
12/31/2010	\$229,923	\$58,666	(\$171,257)	392%	\$48,044	(356%)
12/31/2011	235,178	60,314	(174,864)	390%	54,019	(324%)
12/31/2012	268,608	62,221	(206,387)	432%	51,551	(400%)
12/31/2013	309,375	71,677	(237,698)	432%	52,902	(449%)
12/31/2014	329,492	84,441	(245,051)	390%	51,430	(476%)
12/31/2015	333,829	87,875	(245,954)	380%	55,920	(440%)

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) is a cost-sharing pool under Statement No. 45 of the Governmental Accounting Standards Board (GASB 45). Consequently, each employer reports the contractually required contribution. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 was calculated as a part of this valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
	Tier 1 / Tier 2	OPSRP	
		General Service	Police & Fire
July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern employer financial reporting for retiree healthcare obligations for fiscal years beginning after June 15, 2017. In general, the changes required by GASB 75 parallel those that occurred for pension reporting when GASB 68 replaced GASB 27. Accounting information for reporting under GASB 75 will be provided separately and is not included in this report.

Executive Summary

Principal Valuation Results

A summary of principal valuation results from the current valuation and the prior valuation follows. Any changes in actuarial assumptions, methods or plan provisions between the two valuations are described later in this report. More detailed information can be found in the system-wide actuarial valuation report.

Estacada Cemetery District

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
T1/T2 UAL	(\$245,954)	(\$245,051)
Allocated pooled OPSRP UAL	7,950	5,880
Side account	0	0
Net unfunded pension actuarial accrued liability	(238,004)	(239,171)
Combined valuation payroll	55,920	51,430
Net pension UAL as a percentage of payroll	(426%)	(465%)
Calculated side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	\$272	\$409

In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer's combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.

Executive Summary

Principal Valuation Results (continued)

Tier 1/Tier 2

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
Normal cost	\$1,124	\$1,340
Tier 1/Tier 2 valuation payroll	7,149	8,451
Tier 1/Tier 2 pension normal cost rate	21.22%	21.36%
Tier 1/ Tier 2 Actuarial accrued liability	\$87,875	\$84,441
Actuarial asset value	333,829	329,492
Tier 1/Tier 2 Unfunded actuarial accrued liability	(245,954)	(245,051)
Tier 1/ Tier 2 Funded status	380%	390%
Combined valuation payroll	\$55,920	\$51,430
Tier 1/Tier 2 UAL as a percentage of payroll	(440%)	(476%)
Tier 1/Tier 2 UAL rate (includes Multnomah Fire District #10)	(15.72%)	(15.86%)
Tier 1/Tier 2 active members ¹	0	0
Tier 1/Tier 2 dormant members	1	1
Tier 1/Tier 2 retirees and beneficiaries	0	0

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
General service normal cost	\$342.2	\$301.3
OPSRP general service valuation payroll	4,266.9	3,720.4
General service normal cost rate	8.02%	8.10%
Police and fire normal cost	\$69.9	\$59.6
OPSRP police and fire valuation payroll	546.4	462.3
Police and fire normal cost rate	12.79%	12.90%
Actuarial accrued liability	\$3,742.5	\$3,064.1
Actuarial asset value	2,389.1	2,024.6
Unfunded actuarial accrued liability	1,353.5	1,039.5
Funded status	64%	66%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	14%	11%
UAL rate	1.27%	1.01%

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
RHIA		
Normal cost	\$3.3	\$3.5
Tier 1 / Tier 2 valuation payroll	4,730.8	4,933.1
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	\$465.6	\$468.4
Actuarial asset value	419.3	395.9
Unfunded actuarial accrued liability	46.3	72.5
Funded status	90%	85%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	0%	1%
UAL rate	0.43%	0.43%

Side Account Information

Reconciliation of Side Accounts

The following table reconciles the total side account from the beginning of the year to the end of the year. Side account transfers were calculated by PERS and made on a monthly basis. The amount of these transfers is shown in the table below.

All information in this table has been provided by PERS.

	New	Continuing	Total
1. Side account as of December 31, 2014	N/A		
2. Deposits made during 2015		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2015			
5. Side account earnings during 2015			
6. Side account as of December 31, 2015 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2015	December 31, 2014
Side account 1	\$0	\$0
Side account 2	0	0
Side account 3	0	0
Total	\$0	\$0

Development of Side Account Rate

The rate relief attributable to an employer's side account is determined by amortizing the side account balance on the valuation date over a fixed period, and expressing the result as a percentage of combined valuation payroll. For side accounts established prior to December 31, 2009, the fixed period ends December 31, 2027. For side accounts established at a later date, the fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2015	December 31, 2014
1. Total side account	\$0	\$0
2. Combined valuation payroll	55,920	51,430
3. Average Amortization factor	9.504	10.118
4. Total side account rate (-1. ÷ 2. ÷ 3.)¹	0.00%	0.00%

¹ For employers with more than one side account, the Total Side Account Rate is determined by calculating the rate on each side account separately and adding the rates together.

Tier 1/Tier 2 Valuation Results

Assets

A summary of the market value of pension assets, and reconciliation from the prior year are shown below.

Summary of Market Value of Tier 1/Tier 2 Pension Assets

	December 31, 2015	December 31, 2014
1. Member reserves	\$34,110	\$33,020
2. Employer reserves	299,719	296,472
3. Benefits in force reserve	0	0
4. Total market value of assets (1. + 2. + 3.)	\$333,829	\$329,492

The market value of member and employer reserves is provided by PERS. The benefits in force reserve provided by PERS is allocated each year among employers in proportion to their liabilities for retired members and beneficiaries.

Reconciliation of Tier 1/Tier 2 Pension Assets

	December 31, 2014 to December 31, 2015
1. Market value of assets at beginning of year	\$329,492
2. Regular employer contributions	(2,483)
3. Benefit payments and expense	0
4. Adjustments ¹	598
5. Interest credited	6,222
6. Total transferred from side accounts	0
7. Market value of assets at end of year (1. + 2. + 3. + 4. + 5. + 6.)	\$333,829

¹ Note the adjustment item above includes a reallocation of the benefits in force reserve, transfers to Multnomah Fire District #10, and other adjustments made by PERS.

Tier 1/Tier 2 Valuation Results

Liabilities

Normal Cost

The normal cost represents the value of benefits assigned to the next year of service by the actuarial cost method. If all actuarial assumptions are met, the normal cost represents the amount that would need to be contributed each year to fund plan benefits. Amounts shown below include assumed administrative expenses, which are allocated pro-rata based on normal cost.

Summary of Normal Cost by Tier/Member Classification

	December 31, 2015	December 31, 2014
Tier 1 Police & Fire	\$0	\$0
Tier 1 General Service	1,124	1,340
Tier 2 Police & Fire	0	0
Tier 2 General Service	0	0
Total	\$1,124	\$1,340

Change in Tier 1/Tier 2 Normal Cost

The following table shows the impact of the assumption, method, and plan changes on normal cost as of December 31, 2015.

	Before Changes	After Changes	Net Change
Normal Cost	\$1,124	\$1,124	\$0

Tier 1/Tier 2 Valuation Results

Liabilities

Actuarial Accrued Liability

The actuarial accrued liability represents the value of benefits allocated to service performed before the valuation date by the actuarial cost method. If all actuarial assumptions are met, the actuarial accrued liability represents the amount of assets that would need to be accumulated as of the valuation date to provide for the portion of benefits allocated to service already performed.

Summary of Actuarial Accrued Liability by Tier/Member Classification

	December 31, 2015	December 31, 2014
Active Members		
▪ Tier 1 Police & Fire	\$0	\$0
▪ Tier 1 General Service	22,245	20,121
▪ Tier 2 Police & Fire	0	0
▪ Tier 2 General Service	0	0
▪ Total Active Members	\$22,245	\$20,121
Dormant Members	65,630	64,320
Retired Members and Beneficiaries	0	0
Total Actuarial Accrued Liability	\$87,875	\$84,441

Change in Tier 1/Tier 2 Actuarial Accrued Liability

The following table shows the impact of the assumption, method, and plan changes on the actuarial accrued liability as of December 31, 2015.

	Before Changes	After Changes	Net Change
Actuarial Accrued Liability	\$87,875	\$87,875	\$0

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Summary of UAL

The UAL represents the difference between the assets accumulated and the liability attributed to prior years of service by the cost method.

	December 31, 2015	December 31, 2014
1. Actuarial accrued liability	\$87,875	\$84,441
2. Actuarial value of assets	333,829	329,492
3. Unfunded accrued liability (1. – 2.)	(245,954)	(245,051)
4. Funded percentage (2. ÷ 1.)	380%	390%
5. Combined valuation payroll	\$55,920	\$51,430
6. Unfunded accrued liability as % of combined valuation payroll (3. ÷ 5.)	(440%)	(476%)

Reconciliation of UAL Bases

Beginning with the December 31, 2013 actuarial valuation, each odd-year valuation establishes a 20-year closed-period amortization schedule for outstanding Tier 1/Tier 2 UAL amounts. Amortization schedules are calculated based on the total Tier 1/Tier 2 UAL as of that valuation date less the remaining unamortized balance of previously established Tier 1/Tier 2 UAL bases.

Amortization Base	UAL December 31, 2014	Payment	Interest	UAL December 31, 2015	Next Year's Payment
December 31, 2013	(\$238,205)	(\$17,843)	(\$17,153)	(\$237,515)	(\$18,468)
December 31, 2015	N/A	N/A	N/A	(\$8,439)	(\$611)
Total				(\$245,954)	(\$19,079)

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Actuarial Gain or Loss since Prior Valuation

The system-wide actuarial valuation report contains a detailed analysis of gains and losses since the last valuation. The table below shows the gain or loss for the individual employer.

1. Expected actuarial accrued liability	
a. Actuarial accrued liability at December 31, 2014	\$84,441
b. Normal cost at December 31, 2014 (excluding assumed expenses)	1,340
c. Benefit payments during 2015	0
d. Interest at 7.50% to December 31, 2015	6,383
e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)	92,164
f. Change in actuarial accrued liability due to assumption, method, and plan changes	0
g. Expected actuarial accrued liability at December 31, 2015 (e. + f.)	92,164
2. Actuarial accrued liability at December 31, 2015	87,875
3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)	4,289
4. Expected actuarial value of assets	
a. Actuarial value of assets at December 31, 2014	329,492
b. Contributions for 2015 ¹	(2,483)
c. Benefit payments and expenses during 2015	0
d. Interest at 7.50% to December 31, 2015	24,619
e. Expected actuarial value of assets at December 31, 2015 (a. + b. + c. + d.)	351,628
5. Actuarial value of assets at December 31, 2015	333,829
6. Gain/(loss) on actuarial value of assets (5. - 4.e.)	(17,799)
7. Total actuarial gain/(loss) (3. + 6.)	(\$13,510)

Unfunded Accrued Liability Reconciliation

A reconciliation of the Tier 1/Tier 2 UAL from December 31, 2014 is provided below.

1. UAL at December 31, 2014	(\$245,051)
2. Expected increase	(14,413)
3. Liability (gain)/loss	(4,289)
4. Asset (gain)/loss	17,799
5. Change due to changes in assumptions, methods, and plan provisions	0
6. UAL at December 31, 2015 (1. + 2. + 3. + 4. + 5.)	(\$245,954)

¹ Includes rate relief from side accounts.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Normal Cost Rate

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

Development of Tier 1/Tier 2 Normal Cost Rate

	December 31, 2015			December 31, 2014		
	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate
Tier 1 Police & Fire	\$0	\$0	0.00%	\$0	\$0	0.00%
Tier 1 General Service	1,124	7,149	15.72%	1,340	8,451	15.86%
Tier 2 Police & Fire	0	0	0.00%	0	0	0.00%
Tier 2 General Service	0	0	0.00%	0	0	0.00%
Total	\$1,124	\$7,149	15.72%	\$1,340	\$8,451	15.86%

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Development of Tier 1/Tier 2 UAL Rates

The UAL rate is determined by calculating the next year's scheduled payment to the UAL as a percentage of combined valuation payroll.

	December 31, 2015	December 31, 2014
1. Total Tier 1/Tier 2 UAL	(\$245,954)	(\$245,051)
2. Next year's Tier 1/Tier 2 UAL payment	(19,079)	(18,338)
3. Combined valuation payroll	55,920	51,430
4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)	(34.12%)	(35.66%)

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	15.72%	15.86%
b. Tier 1/Tier 2 UAL rate	(34.12%)	(35.66%)
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate (a. + b. + c.)	(18.25%)	(19.65%)

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Adjustments Due to Rate Collar and Minimum Rate Requirements

Employer contribution rates are generally limited to change by no more than the greater of 3 percent of payroll or 20 percent from the current contribution rate. However, if the funded percentage excluding side accounts is below 60 percent or above 140 percent the rate collar doubles in size. If the funded percentage excluding side accounts is between 60 and 70 percent or 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

The table below shows the current contribution rate for the period from July 1, 2015 through June 30, 2017, develops the maximum and minimum contribution rates effective July 1, 2017 based on the collar, and calculates the net adjustment due to the collar and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

1. Current net Tier 1/Tier 2 pension contribution rate		5.47%
2. Employer contribution rate attributable to side accounts		0.00%
3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)		5.47%
4. Size of rate collar		
a. 20% of current employer contribution rate (20% x 3.)		1.09%
b. Preliminary size of rate collar (maximum of 3% or a.)		3.00%
c. Funded percentage		380%
d. Size of rate collar (If c. < 60% or c. > 140%, 2 x b. If c. is 70%-130%, b. Otherwise, a graded rate between b. and 2 x b.)		6.00%
5. July 1, 2017 minimum employer contribution rate	(3. – 4.d. but not < 0%)	0.00%
6. July 1, 2017 maximum employer contribution rate	(3. + 4.d.)	11.47%
7. July 1, 2017 total pension rate, before adjustment		(18.25%)
8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)		18.25%
9. July 1, 2017 Tier 1/Tier 2 UAL rate, before collar		(34.12%)
10. July 1, 2017 Tier 1/Tier 2 UAL rate, after collar	(8. + 9.)	(15.87%)
11. July 1, 2017 Tier 1/Tier 2 pension rate, after collar		0.00%
12. Tier 1/Tier 2 retiree healthcare rate		0.50%
13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)		5.50%
14. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment		15.72%
15. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)		21.22%
16. July 1, 2017 Tier 1/Tier 2 pension rate, after minimum adjustment	(11. + 13.)	5.50%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Post-Rate Collar)

The table below summarizes the employer's pension contribution rate for Tier 1 /Tier 2 after adjustments for the rate collar and the 6 percent of payroll minimum employer contribution rate.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	21.22%	21.36%
b. Tier 1/Tier 2 UAL rate	(15.87%)	(16.01%)
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate	5.50%	5.50%
<i>(a. + b. + c., minimum of 5.50%)</i>		

Data

Demographic Information

Employer Valuation Payroll

	General Service	Police & Fire	Total
Tier 1	\$7,149	\$0	\$7,149
Tier 2	0	0	0
Tier 1/Tier 2 valuation payroll	7,149	0	7,149
OPSRP valuation payroll	48,771	0	48,771
Combined valuation payroll	\$55,920	\$0	\$55,920

Employer Member Census

	December 31							
	2015				2014			
	Tier 1	Tier 2	OPSRP	Total	Tier 1	Tier 2	OPSRP	Total
Active Members ¹								
General Service	0	0	1	1	0	0	1	1
Police & Fire	0	0	0	0	0	0	0	0
Total	0	0	1	1	0	0	1	1
Active Members with previous service segments with the employer								
General Service	1	0	N/A	1	1	0	N/A	1
Police & Fire	0	0	N/A	0	0	0	N/A	0
Total	1	0	N/A	1	1	0	N/A	1
Dormant Members								
General Service	0	1	0	1	0	1	0	1
Police & Fire	0	0	0	0	0	0	0	0
Total	0	1	0	1	0	1	0	1
Retired Members and Beneficiaries								
General Service	0	0	0	0	0	0	0	0
Police & Fire	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0
Grand Total Number of Members	1	1	1	3	1	1	1	3

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Data

Demographic Information (continued)

Employer Tier 1/Tier 2 Active Members as of December 31, 2015

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
<20										
20-24										
25-29										
30-34										
35-39										
40-44										
45-49										
50-54										
55-59										
60-64										
65-69										
70-74										
75+										
Total	0	0	0	0	0	0	0	0	0	0

Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2015

Dormant Members			Retired Members and Beneficiaries		
Age	Count	Average Deferred Monthly Benefit	Age	Count	Average Monthly Benefit
<20			<45		
20-24			45-49		
25-29			50-54		
30-34			55-59		
35-39			60-64		
40-44			65-69		
45-49			70-74		
50-54			75-79		
55-59	1	467	80-84		
60-64			85-89		
65-69			90-94		
70-74			95-99		
75+			100+		
Total	1	467	Total		

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2015 valuation can be found in the system-wide actuarial valuation report.

Actuarial Methods and Valuation Procedures

A brief summary of the methods used in this valuation is shown below:

<i>Actuarial cost method</i>	Entry Age Normal.
<i>Amortization Method</i>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. Gains and losses between subsequent odd-year valuations will be amortized as a level percentage of projected combined valuation payroll over a closed 20 year period.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.</p>

Economic Assumptions

A brief summary of the key economic assumptions used in this valuation is shown below:

<i>Net investment return</i>	7.50% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.50% compounded annually on members' regular account balances.</p> <p>7.50% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 6.3% in 2016 to 4.4% in 2094.
<i>Administrative Expenses</i>	<p>\$5.5 million added to OPSRP normal cost.</p> <p>\$33.0 million added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2014 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

There were no changes in actuarial methods and allocation procedures since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA actuarial methods and allocation procedures is provided as part of the system-wide valuation report.

Changes in Assumptions

There were no changes in assumptions since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA assumptions is provided as part of the system-wide valuation report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Glossary

Actuarial Accrued Liability

The portion of the present value of prospective benefits allocated to service and compensation before the valuation date in accordance with the actuarial cost method.

Actuarial Asset Value

The value of assets used in calculating the required contributions. The actuarial asset value may be equal to the fair market value of assets, or it may spread the recognition of certain investment gains or losses over a period of years in accordance with an asset valuation method.

Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disablement and retirement; rates of investment earnings and other relevant items.

Actuarial Cost Method

Sometimes called “funding method,” a particular technique used by actuaries to establish the amount and incidence of the annual actuarial cost of pension plan benefits, or normal cost, and the related unfunded actuarial accrued liability. Ordinarily, the annual contribution to the plan comprises the normal cost and an amount for amortization of the unfunded actuarial accrued liability.

Actuarial Gain or (Loss)

A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions, during the period between two actuarial valuation dates, as determined in accordance with a particular actuarial cost method.

Combined Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for both Tier 1/Tier 2 and OPSRP active members. This payroll is used to calculate UAL rates.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

Employer Contribution Rate

Consists of the normal cost rate and the UAL rates, plus adjustments for other items such as side account rate offsets.

Funded Status

The actuarial value of assets expressed as a percentage of the actuarial accrued liability.

Normal Cost

The annual cost allocated to the current year, under the actuarial cost method in use. The normal cost divided by the applicable payroll is the normal cost rate.

OPSRP Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for OPSRP active members. This payroll is used to calculate OPSRP normal cost rates.

Glossary

Pre-SLGRP Liability

The sum of Pre-SLGRP Pooled Liabilities and Transition Liabilities.

Pre-SLGRP Pooled Liability

The difference between the total UAL and the UAL attributable to the SLGRP for a pool of employers that joined the SLGRP. There are currently two pre-SLGRP pools. One was created for State Agencies and Community Colleges when the SLGRP was formed. The other one was created when the Local Government Rate Pool joined the SLGRP.

Present Value

Sometimes called “actuarial present value,” the estimated cost (as of the valuation date) of a series of future payments. The present value is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Rate Collar

A methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution rate and funded status.

Required Supplementary Information (RSI)

Schedules, statistical data, and other information that are an essential part of financial reporting and should be presented with, but are not part of, the basic financial statements of a governmental entity.

Statement No. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions.

Statement No. 68 of the Governmental Accounting Standards Board (GASB 68)

The accounting standard governing a state or local governmental employer’s accounting for pensions for fiscal years beginning after June 15, 2014.

Statement No. 75 of the Governmental Accounting Standards Board (GASB 75)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

The difference between the total UAL and the UAL attributable to the SLGRP for an individual employer that joined the SLGRP or the Local Government Rate Pool.

Unfunded Accrued Liability (UAL)

The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. The UAL is divided by combined valuation payroll and an amortization factor to determine an initial pre-collar UAL rate. The final UAL rate can be adjusted by the rate collar.



Milliman
111 SW Fifth Avenue, Suite 3700
Portland, OR 97204-3654
503 227 0634

This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

September 2016

City of Eugene/2111
Oregon Public Employees Retirement System

Dear Sir or Madam:

As part of our engagement with the Oregon Public Employees Retirement Board, we performed a system-wide actuarial valuation of the Oregon Public Employees Retirement System (“PERS” or “the System”) as of December 31, 2015. The attached report, which is an informational supplement to the system-wide report, provides you with employer-specific contribution rates that will become effective July 1, 2017. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information will be provided separately by PERS and is not included in this report.

This report reflects the System's benefit provisions in effect as of December 31, 2015. The full development of the valuation results for the OPSRP and Retiree Health Insurance Account (RHIA) programs can be found in the separate system-wide actuarial valuation report. Costs of the IAP (Individual Account Program) are not included in this or the system-wide actuarial valuation report. Further, costs of pension obligation bond payments are not included in this or the system-wide actuarial valuation report.

If you have any questions about this report, please contact Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, OPSRP general service, and OPSRP police and fire payroll,
- Information to assist you in completing GASB 45 financial reporting requirements, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- Detailed development of Tier 1/Tier 2 valuation results,
- A brief summary of methods and assumptions, and
- A brief summary of any changes in System benefit provisions.

Additional information is provided in the system-wide actuarial valuation report, which is available at www.oregon.gov/PERS/Pages/section/financial_reports/financials.aspx.



September 2016
City of Eugene/2111

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the System's staff. This information includes, but is not limited to, System benefit provisions as defined by statute, member census data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for the System have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer a reasonable estimate of anticipated experience affecting the System.

A valuation report is only an estimate of the System's financial condition as of a single date. It can neither predict the System's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of System benefits, only the timing of System contributions. While a valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: System experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the System's funded status); and changes in System benefit provisions or applicable law. Due to the limited scope of this assignment, we did not perform an analysis of the potential range of future measurements. The Board has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in September 2015.

Some of the actuarial computations presented in this report are for purposes of determining the contribution rates effective from July 2017 to June 2019 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.



September 2016
City of Eugene/2111

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the System. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

Additional information is provided in the system-wide actuarial valuation report.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Larrabee".

Matt Larrabee, FSA, EA, MAAA
Principal and Consulting Actuary

A handwritten signature in black ink, appearing to read "Scott Preppernau".

Scott Preppernau, FSA, EA, MAAA
Principal and Consulting Actuary



ACTUARIAL VALUATION REPORT DECEMBER 31, 2015

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

INDEPENDENT EMPLOYERS

City of Eugene -- #2111

September 2016

Secondary Employers

2141 City Of Eugene Public Library

CONTENTS

Executive Summary **1**

Employer Contribution Rates 1

Accounting Information 3

Principal Valuation Results 5

 ▪ Employer 5

 ▪ Tier 1/Tier 2 6

 ▪ OPSRP 7

 ▪ Retiree Healthcare 7

Side Account Information **8**

Tier 1/Tier 2 Valuation Results **10**

Assets 10

Liabilities 11

Unfunded Accrued Liability (UAL) 13

Contribution Rate Development 15

Data **20**

Brief Summary of Actuarial Methods and Assumptions **22**

Brief Summary of Changes in Plan Provisions **24**

Glossary **25**

Executive Summary

Milliman has prepared this report for City of Eugene to:

- Provide summary December 31, 2015 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2017 through June 30, 2019,
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2015, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45. GASB 68 information will be provided separately by PERS and is not included in this report.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2015 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to City of Eugene.

Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2017 through June 30, 2019 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

Employer Rates Effective July 1, 2017 for City of Eugene

	Payroll		
	Tier 1/Tier 2	OPSRP General Service	OPSRP Police & Fire
Pension			
Normal cost rate	16.97%	8.02%	12.79%
Tier 1/Tier 2 UAL rate ¹	2.66%	2.66%	2.66%
OPSRP UAL rate	1.27%	1.27%	1.27%
Side account rate relief	0.00%	0.00%	0.00%
Net pension contribution rate	20.90%	11.95%	16.72%
Retiree Healthcare			
Normal cost rate	0.07%	0.00%	0.00%
UAL rate	0.43%	0.43%	0.43%
Net retiree healthcare rate	0.50%	0.43%	0.43%
Total net employer contribution rate	21.40%	12.38%	17.15%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate.

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 Biennium

The rate collar limits changes in contribution rates, but does not limit changes in rates for individual employers related to side accounts. The table below shows the possible minimum and maximum rates first effective as of July 1, 2019, which will depend on the funded status as of December 31, 2017. If the employer's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2015 is 78%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	19.63%	19.63%
Minimum 2019-2021 Rate	15.70%	11.77%
Maximum 2019-2021 Rate	23.56%	27.49%

Executive Summary

Accounting Information

Milliman is not an accounting or audit firm and cannot provide accounting advice. Milliman is not responsible for the interpretation of, or compliance with, accounting standards; citations to, and descriptions of accounting standards provided in this report are for reference purposes only. The information provided in this section is intended to assist the employer in completing its financial statements, but any accounting determination should be reviewed by your auditor.

Pension

In June 2012 the GASB issued Statement No. 68, which replaced GASB 27 and governs employer financial reporting for fiscal years beginning after June 15, 2014. The new standard replaced many of the key elements of the prior reporting requirements. Under the new rules, employers are required to record a balance sheet liability for their unfunded pension obligations. In addition, the timing and coordination of plan and employer reporting has changed under the new requirements. GASB 68 information for employers will be provided separately by PERS and is not included in this report.

Schedule of Funding Progress

Under GASB 27, the Schedule of Funding Progress for Tier 1/Tier 2 pension liabilities was reported in the Required Supplementary Information. This schedule is no longer required now that GASB 68 has replaced GASB 27. However, for additional information and the sake of historical comparison, the updated schedule is shown below for the last several valuations. For employers with side accounts, the actuarial value of assets in this Schedule includes the value of the employer's side accounts.

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (b - a)	Funded Ratio (a ÷ b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a) ÷ c)
12/31/2010	\$608,092,209	\$692,573,860	\$84,481,651	88%	\$92,340,211	91%
12/31/2011	592,998,990	719,826,602	126,827,612	82%	95,549,026	133%
12/31/2012	647,467,866	707,760,655	60,292,789	91%	94,530,650	64%
12/31/2013	706,786,096	731,023,275	24,237,179	97%	90,070,653	27%
12/31/2014	720,594,457	864,959,317	144,364,860	83%	95,307,300	151%
12/31/2015	697,822,159	897,120,008	199,297,849	78%	102,849,280	194%

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) is a cost-sharing pool under Statement No. 45 of the Governmental Accounting Standards Board (GASB 45). Consequently, each employer reports the contractually required contribution. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 was calculated as a part of this valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
	Tier 1 / Tier 2	OPSRP	
		General Service	Police & Fire
July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern employer financial reporting for retiree healthcare obligations for fiscal years beginning after June 15, 2017. In general, the changes required by GASB 75 parallel those that occurred for pension reporting when GASB 68 replaced GASB 27. Accounting information for reporting under GASB 75 will be provided separately and is not included in this report.

Executive Summary

Principal Valuation Results

A summary of principal valuation results from the current valuation and the prior valuation follows. Any changes in actuarial assumptions, methods or plan provisions between the two valuations are described later in this report. More detailed information can be found in the system-wide actuarial valuation report.

City of Eugene

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
T1/T2 UAL	\$199,297,849	\$144,364,860
Allocated pooled OPSRP UAL	14,621,459	10,895,699
Side account	0	0
Net unfunded pension actuarial accrued liability	213,919,308	155,260,559
Combined valuation payroll	102,849,280	95,307,300
Net pension UAL as a percentage of payroll	208%	163%
Calculated side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	\$499,401	\$757,558

In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer’s combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.

Executive Summary

Principal Valuation Results (continued)

Tier 1/Tier 2

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
Normal cost	\$9,561,203	\$9,903,872
Tier 1/Tier 2 valuation payroll	56,358,140	56,831,409
Tier 1/Tier 2 pension normal cost rate	16.97%	17.43%
Tier 1/ Tier 2 Actuarial accrued liability	\$897,120,008	\$864,959,317
Actuarial asset value	697,822,159	720,594,457
Tier 1/Tier 2 Unfunded actuarial accrued liability	199,297,849	144,364,860
Tier 1/ Tier 2 Funded status	78%	83%
Combined valuation payroll	\$102,849,280	\$95,307,300
Tier 1/Tier 2 UAL as a percentage of payroll	194%	151%
Tier 1/Tier 2 UAL rate	2.66%	2.20%
(includes Multnomah Fire District #10)		
Tier 1/Tier 2 active members ¹	684	743
Tier 1/Tier 2 dormant members	343	369
Tier 1/Tier 2 retirees and beneficiaries	1,647	1,572

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
General service normal cost	\$342.2	\$301.3
OPSRP general service valuation payroll	4,266.9	3,720.4
General service normal cost rate	8.02%	8.10%
Police and fire normal cost	\$69.9	\$59.6
OPSRP police and fire valuation payroll	546.4	462.3
Police and fire normal cost rate	12.79%	12.90%
Actuarial accrued liability	\$3,742.5	\$3,064.1
Actuarial asset value	2,389.1	2,024.6
Unfunded actuarial accrued liability	1,353.5	1,039.5
Funded status	64%	66%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	14%	11%
UAL rate	1.27%	1.01%

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
RHIA		
Normal cost	\$3.3	\$3.5
Tier 1 / Tier 2 valuation payroll	4,730.8	4,933.1
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	\$465.6	\$468.4
Actuarial asset value	419.3	395.9
Unfunded actuarial accrued liability	46.3	72.5
Funded status	90%	85%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	0%	1%
UAL rate	0.43%	0.43%

Side Account Information

Reconciliation of Side Accounts

The following table reconciles the total side account from the beginning of the year to the end of the year. Side account transfers were calculated by PERS and made on a monthly basis. The amount of these transfers is shown in the table below.

All information in this table has been provided by PERS.

	New	Continuing	Total
1. Side account as of December 31, 2014	N/A		
2. Deposits made during 2015		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2015			
5. Side account earnings during 2015			
6. Side account as of December 31, 2015 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2015	December 31, 2014
Side account 1	\$0	\$0
Side account 2	0	0
Side account 3	0	0
Total	\$0	\$0

Development of Side Account Rate

The rate relief attributable to an employer's side account is determined by amortizing the side account balance on the valuation date over a fixed period, and expressing the result as a percentage of combined valuation payroll. For side accounts established prior to December 31, 2009, the fixed period ends December 31, 2027. For side accounts established at a later date, the fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2015	December 31, 2014
1. Total side account	\$0	\$0
2. Combined valuation payroll	102,849,280	95,307,300
3. Average Amortization factor	9.504	10.118
4. Total side account rate (-1. ÷ 2. ÷ 3.)¹	0.00%	0.00%

¹ For employers with more than one side account, the Total Side Account Rate is determined by calculating the rate on each side account separately and adding the rates together.

Tier 1/Tier 2 Valuation Results

Assets

A summary of the market value of pension assets, and reconciliation from the prior year are shown below.

Summary of Market Value of Tier 1/Tier 2 Pension Assets

	December 31, 2015	December 31, 2014
1. Member reserves	\$69,134,416	\$75,689,484
2. Employer reserves	346,731,014	346,689,103
3. Benefits in force reserve	281,956,729	298,215,870
4. Total market value of assets (1. + 2. + 3.)	\$697,822,159	\$720,594,457

The market value of member and employer reserves is provided by PERS. The benefits in force reserve provided by PERS is allocated each year among employers in proportion to their liabilities for retired members and beneficiaries.

Reconciliation of Tier 1/Tier 2 Pension Assets

	December 31, 2014 to December 31, 2015
1. Market value of assets at beginning of year	\$720,594,457
2. Regular employer contributions	9,090,473
3. Benefit payments and expense	(51,274,186)
4. Adjustments ¹	3,410,595
5. Interest credited	16,000,820
6. Total transferred from side accounts	0
7. Market value of assets at end of year (1. + 2. + 3. + 4. + 5. + 6.)	\$697,822,159

¹ Note the adjustment item above includes a reallocation of the benefits in force reserve, transfers to Multnomah Fire District #10, and other adjustments made by PERS.

Tier 1/Tier 2 Valuation Results

Liabilities

Normal Cost

The normal cost represents the value of benefits assigned to the next year of service by the actuarial cost method. If all actuarial assumptions are met, the normal cost represents the amount that would need to be contributed each year to fund plan benefits. Amounts shown below include assumed administrative expenses, which are allocated pro-rata based on normal cost.

Summary of Normal Cost by Tier/Member Classification

	December 31, 2015	December 31, 2014
Tier 1 Police & Fire	\$2,290,525	\$2,361,195
Tier 1 General Service	2,684,012	3,096,961
Tier 2 Police & Fire	2,337,505	2,196,674
Tier 2 General Service	2,249,161	2,249,042
Total	\$9,561,203	\$9,903,872

Change in Tier 1/Tier 2 Normal Cost

The following table shows the impact of the assumption, method, and plan changes on normal cost as of December 31, 2015.

	Before Changes	After Changes	Net Change
Normal Cost	\$9,561,203	\$9,561,203	\$0

Tier 1/Tier 2 Valuation Results

Liabilities

Actuarial Accrued Liability

The actuarial accrued liability represents the value of benefits allocated to service performed before the valuation date by the actuarial cost method. If all actuarial assumptions are met, the actuarial accrued liability represents the amount of assets that would need to be accumulated as of the valuation date to provide for the portion of benefits allocated to service already performed.

Summary of Actuarial Accrued Liability by Tier/Member Classification

	December 31, 2015	December 31, 2014
Active Members		
▪ Tier 1 Police & Fire	\$69,652,260	\$70,099,052
▪ Tier 1 General Service	88,305,808	95,540,081
▪ Tier 2 Police & Fire	42,191,943	35,894,034
▪ Tier 2 General Service	49,700,228	44,484,217
▪ Total Active Members	\$249,850,239	\$246,017,384
Dormant Members	38,471,208	40,410,535
Retired Members and Beneficiaries	608,798,561	578,531,398
Total Actuarial Accrued Liability	\$897,120,008	\$864,959,317

Change in Tier 1/Tier 2 Actuarial Accrued Liability

The following table shows the impact of the assumption, method, and plan changes on the actuarial accrued liability as of December 31, 2015.

	Before Changes	After Changes	Net Change
Actuarial Accrued Liability	\$897,120,008	\$897,120,008	\$0

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Summary of UAL

The UAL represents the difference between the assets accumulated and the liability attributed to prior years of service by the cost method.

	December 31, 2015	December 31, 2014
1. Actuarial accrued liability	\$897,120,008	\$864,959,317
2. Actuarial value of assets	697,822,159	720,594,457
3. Unfunded accrued liability (1. – 2.)	199,297,849	144,364,860
4. Funded percentage (2. ÷ 1.)	78%	83%
5. Combined valuation payroll	\$102,849,280	\$95,307,300
6. Unfunded accrued liability as % of combined valuation payroll (3. ÷ 5.)	194%	151%

Reconciliation of UAL Bases

Beginning with the December 31, 2013 actuarial valuation, each odd-year valuation establishes a 20-year closed-period amortization schedule for outstanding Tier 1/Tier 2 UAL amounts. Amortization schedules are calculated based on the total Tier 1/Tier 2 UAL as of that valuation date less the remaining unamortized balance of previously established Tier 1/Tier 2 UAL bases.

Amortization Base	UAL December 31, 2014	Payment	Interest	UAL December 31, 2015	Next Year's Payment
December 31, 2013	\$24,288,895	\$1,819,393	\$1,748,980	\$24,218,482	\$1,883,095
December 31, 2015	N/A	N/A	N/A	\$175,079,367	\$12,668,550
Total				\$199,297,849	\$14,551,645

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Actuarial Gain or Loss since Prior Valuation

The system-wide actuarial valuation report contains a detailed analysis of gains and losses since the last valuation. The table below shows the gain or loss for the individual employer.

1. Expected actuarial accrued liability	
a. Actuarial accrued liability at December 31, 2014	\$864,959,317
b. Normal cost at December 31, 2014 (excluding assumed expenses)	9,473,924
c. Benefit payments during 2015	(50,878,150)
d. Interest at 7.50% to December 31, 2015	63,319,290
e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)	886,874,381
f. Change in actuarial accrued liability due to assumption, method, and plan changes	0
g. Expected actuarial accrued liability at December 31, 2015 (e. + f.)	886,874,381
2. Actuarial accrued liability at December 31, 2015	897,120,008
3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)	(10,245,627)
4. Expected actuarial value of assets	
a. Actuarial value of assets at December 31, 2014	720,594,457
b. Contributions for 2015 ¹	9,090,473
c. Benefit payments and expenses during 2015	(51,274,186)
d. Interest at 7.50% to December 31, 2015	52,462,695
e. Expected actuarial value of assets at December 31, 2015 (a. + b. + c. + d.)	730,873,439
5. Actuarial value of assets at December 31, 2015	697,822,159
6. Gain/(loss) on actuarial value of assets (5. - 4.e.)	(33,051,280)
7. Total actuarial gain/(loss) (3. + 6.)	(\$43,296,907)

Unfunded Accrued Liability Reconciliation

A reconciliation of the Tier 1/Tier 2 UAL from December 31, 2014 is provided below.

1. UAL at December 31, 2014	\$144,364,860
2. Expected increase	11,636,082
3. Liability (gain)/loss	10,245,627
4. Asset (gain)/loss	33,051,280
5. Change due to changes in assumptions, methods, and plan provisions	0
6. UAL at December 31, 2015 (1. + 2. + 3. + 4. + 5.)	\$199,297,849

¹ Includes rate relief from side accounts.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Normal Cost Rate

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

Development of Tier 1/Tier 2 Normal Cost Rate

	December 31, 2015			December 31, 2014		
	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate
Tier 1 Police & Fire	\$2,290,525	\$10,563,644	21.68%	\$2,361,195	\$10,777,226	21.91%
Tier 1 General Service	2,684,012	15,013,560	17.88%	3,096,961	16,518,812	18.75%
Tier 2 Police & Fire	2,337,505	13,040,320	17.93%	2,196,674	12,118,171	18.13%
Tier 2 General Service	2,249,161	17,740,616	12.68%	2,249,042	17,417,200	12.91%
Total	\$9,561,203	\$56,358,140	16.97%	\$9,903,872	\$56,831,409	17.43%

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Development of Tier 1/Tier 2 UAL Rates

The UAL rate is determined by calculating the next year's scheduled payment to the UAL as a percentage of combined valuation payroll.

	December 31, 2015	December 31, 2014
1. Total Tier 1/Tier 2 UAL	\$199,297,849	\$144,364,860
2. Next year's Tier 1/Tier 2 UAL payment	14,551,645	10,507,958
3. Combined valuation payroll	102,849,280	95,307,300
4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)	14.15%	11.03%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	16.97%	17.43%
b. Tier 1/Tier 2 UAL rate	14.15%	11.03%
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate (a. + b. + c.)	31.27%	28.61%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Adjustments Due to Rate Collar and Minimum Rate Requirements

Employer contribution rates are generally limited to change by no more than the greater of 3 percent of payroll or 20 percent from the current contribution rate. However, if the funded percentage excluding side accounts is below 60 percent or above 140 percent the rate collar doubles in size. If the funded percentage excluding side accounts is between 60 and 70 percent or 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

The table below shows the current contribution rate for the period from July 1, 2015 through June 30, 2017, develops the maximum and minimum contribution rates effective July 1, 2017 based on the collar, and calculates the net adjustment due to the collar and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

1. Current net Tier 1/Tier 2 pension contribution rate		16.36%
2. Employer contribution rate attributable to side accounts		0.00%
3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)		16.36%
4. Size of rate collar		
a. 20% of current employer contribution rate (20% x 3.)		3.27%
b. Preliminary size of rate collar (maximum of 3% or a.)		3.27%
c. Funded percentage		78%
d. Size of rate collar (If c. < 60% or c. > 140%, 2 x b. If c. is 70%-130%, b. Otherwise, a graded rate between b. and 2 x b.)		3.27%
5. July 1, 2017 minimum employer contribution rate	(3. – 4.d. but not < 0%)	13.09%
6. July 1, 2017 maximum employer contribution rate	(3. + 4.d.)	19.63%
7. July 1, 2017 total pension rate, before adjustment		31.27%
8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)		(11.64%)
9. July 1, 2017 Tier 1/Tier 2 UAL rate, before collar		14.15%
10. July 1, 2017 Tier 1/Tier 2 UAL rate, after collar	(8. + 9.)	2.51%
11. July 1, 2017 Tier 1/Tier 2 pension rate, after collar		19.63%
12. Tier 1/Tier 2 retiree healthcare rate		0.50%
13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)		0.00%
14. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment		16.97%
15. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)		16.97%
16. July 1, 2017 Tier 1/Tier 2 pension rate, after minimum adjustment	(11. + 13.)	19.63%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Post-Rate Collar)

The table below summarizes the employer's pension contribution rate for Tier 1 /Tier 2 after adjustments for the rate collar and the 6 percent of payroll minimum employer contribution rate.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	16.97%	17.43%
b. Tier 1/Tier 2 UAL rate	2.51%	2.05%
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate <i>(a. + b. + c., minimum of 5.50%)</i>	19.63%	19.63%

Data

Demographic Information

Employer Valuation Payroll

	General Service	Police & Fire	Total
Tier 1	\$15,013,560	\$10,563,644	\$25,577,204
Tier 2	17,740,616	13,040,320	30,780,936
Tier 1/Tier 2 valuation payroll	32,754,176	23,603,964	56,358,140
OPSRP valuation payroll	33,207,636	13,283,504	46,491,140
Combined valuation payroll	\$65,961,812	\$36,887,468	\$102,849,280

Employer Member Census

	December 31							
	2015				2014			
	Tier 1	Tier 2	OPSRP	Total	Tier 1	Tier 2	OPSRP	Total
Active Members ¹								
General Service	212	267	636	1,115	246	281	561	1,088
Police & Fire	89	116	134	339	96	120	134	350
Total	301	383	770	1,454	342	401	695	1,438
Active Members with previous service segments with the employer								
General Service	154	148	N/A	302	164	141	N/A	305
Police & Fire	12	15	N/A	27	15	14	N/A	29
Total	166	163	N/A	329	179	155	N/A	334
Dormant Members								
General Service	173	141	53	367	190	149	45	384
Police & Fire	13	16	4	33	15	15	4	34
Total	186	157	57	400	205	164	49	418
Retired Members and Beneficiaries								
General Service	1,127	107	14	1,248	1,099	71	10	1,180
Police & Fire	392	21	3	416	391	11	2	404
Total	1,519	128	17	1,664	1,490	82	12	1,584
Grand Total Number of Members	2,172	831	844	3,847	2,216	802	756	3,774

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Data

Demographic Information (continued)

Employer Tier 1/Tier 2 Active Members as of December 31, 2015

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
<20										
20-24										
25-29										
30-34			4							4
35-39			35	5						40
40-44		3	47	37	17					104
45-49		1	37	66	25	9				138
50-54		1	24	37	45	21	9			137
55-59			23	42	32	25	12	2		136
60-64			12	31	22	20	6	3		94
65-69			3	14		6	3		1	27
70-74			1	2	1					4
75+										
Total	0	5	186	234	142	81	30	5	1	684

Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2015

Dormant Members			Retired Members and Beneficiaries		
Age	Count	Average Deferred Monthly Benefit	Age	Count	Average Monthly Benefit
<20			<45	8	1,211
20-24			45-49	9	1,534
25-29			50-54	21	3,290
30-34	3	160	55-59	119	2,594
35-39	26	946	60-64	365	2,825
40-44	43	896	65-69	489	2,631
45-49	64	951	70-74	286	2,190
50-54	59	1,123	75-79	156	2,171
55-59	55	1,178	80-84	101	1,765
60-64	51	1,169	85-89	53	1,627
65-69	31	741	90-94	32	1,310
70-74	5	685	95-99	8	826
75+	6	272	100+		
Total	343	1,000	Total	1,647	2,427

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2015 valuation can be found in the system-wide actuarial valuation report.

Actuarial Methods and Valuation Procedures

A brief summary of the methods used in this valuation is shown below:

<i>Actuarial cost method</i>	Entry Age Normal.
<i>Amortization Method</i>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. Gains and losses between subsequent odd-year valuations will be amortized as a level percentage of projected combined valuation payroll over a closed 20 year period.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.</p>

Economic Assumptions

A brief summary of the key economic assumptions used in this valuation is shown below:

<i>Net investment return</i>	7.50% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.50% compounded annually on members' regular account balances.</p> <p>7.50% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 6.3% in 2016 to 4.4% in 2094.
<i>Administrative Expenses</i>	<p>\$5.5 million added to OPSRP normal cost.</p> <p>\$33.0 million added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2014 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

There were no changes in actuarial methods and allocation procedures since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA actuarial methods and allocation procedures is provided as part of the system-wide valuation report.

Changes in Assumptions

There were no changes in assumptions since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA assumptions is provided as part of the system-wide valuation report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Glossary

Actuarial Accrued Liability

The portion of the present value of prospective benefits allocated to service and compensation before the valuation date in accordance with the actuarial cost method.

Actuarial Asset Value

The value of assets used in calculating the required contributions. The actuarial asset value may be equal to the fair market value of assets, or it may spread the recognition of certain investment gains or losses over a period of years in accordance with an asset valuation method.

Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disablement and retirement; rates of investment earnings and other relevant items.

Actuarial Cost Method

Sometimes called “funding method,” a particular technique used by actuaries to establish the amount and incidence of the annual actuarial cost of pension plan benefits, or normal cost, and the related unfunded actuarial accrued liability. Ordinarily, the annual contribution to the plan comprises the normal cost and an amount for amortization of the unfunded actuarial accrued liability.

Actuarial Gain or (Loss)

A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions, during the period between two actuarial valuation dates, as determined in accordance with a particular actuarial cost method.

Combined Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for both Tier 1/Tier 2 and OPSRP active members. This payroll is used to calculate UAL rates.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

Employer Contribution Rate

Consists of the normal cost rate and the UAL rates, plus adjustments for other items such as side account rate offsets.

Funded Status

The actuarial value of assets expressed as a percentage of the actuarial accrued liability.

Normal Cost

The annual cost allocated to the current year, under the actuarial cost method in use. The normal cost divided by the applicable payroll is the normal cost rate.

OPSRP Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for OPSRP active members. This payroll is used to calculate OPSRP normal cost rates.

Glossary

Pre-SLGRP Liability

The sum of Pre-SLGRP Pooled Liabilities and Transition Liabilities.

Pre-SLGRP Pooled Liability

The difference between the total UAL and the UAL attributable to the SLGRP for a pool of employers that joined the SLGRP. There are currently two pre-SLGRP pools. One was created for State Agencies and Community Colleges when the SLGRP was formed. The other one was created when the Local Government Rate Pool joined the SLGRP.

Present Value

Sometimes called “actuarial present value,” the estimated cost (as of the valuation date) of a series of future payments. The present value is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Rate Collar

A methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution rate and funded status.

Required Supplementary Information (RSI)

Schedules, statistical data, and other information that are an essential part of financial reporting and should be presented with, but are not part of, the basic financial statements of a governmental entity.

Statement No. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions.

Statement No. 68 of the Governmental Accounting Standards Board (GASB 68)

The accounting standard governing a state or local governmental employer’s accounting for pensions for fiscal years beginning after June 15, 2014.

Statement No. 75 of the Governmental Accounting Standards Board (GASB 75)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

The difference between the total UAL and the UAL attributable to the SLGRP for an individual employer that joined the SLGRP or the Local Government Rate Pool.

Unfunded Accrued Liability (UAL)

The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. The UAL is divided by combined valuation payroll and an amortization factor to determine an initial pre-collar UAL rate. The final UAL rate can be adjusted by the rate collar.



Milliman
111 SW Fifth Avenue, Suite 3700
Portland, OR 97204-3654
503 227 0634

This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

September 2016

Eugene Water & Electric Board/2132
Oregon Public Employees Retirement System

Dear Sir or Madam:

As part of our engagement with the Oregon Public Employees Retirement Board, we performed a system-wide actuarial valuation of the Oregon Public Employees Retirement System (“PERS” or “the System”) as of December 31, 2015. The attached report, which is an informational supplement to the system-wide report, provides you with employer-specific contribution rates that will become effective July 1, 2017. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information will be provided separately by PERS and is not included in this report.

This report reflects the System's benefit provisions in effect as of December 31, 2015. The full development of the valuation results for the OPSRP and Retiree Health Insurance Account (RHIA) programs can be found in the separate system-wide actuarial valuation report. Costs of the IAP (Individual Account Program) are not included in this or the system-wide actuarial valuation report. Further, costs of pension obligation bond payments are not included in this or the system-wide actuarial valuation report.

If you have any questions about this report, please contact Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, OPSRP general service, and OPSRP police and fire payroll,
- Information to assist you in completing GASB 45 financial reporting requirements, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- Detailed development of Tier 1/Tier 2 valuation results,
- A brief summary of methods and assumptions, and
- A brief summary of any changes in System benefit provisions.

Additional information is provided in the system-wide actuarial valuation report, which is available at www.oregon.gov/PERS/Pages/section/financial_reports/financials.aspx.



September 2016
Eugene Water & Electric Board/2132

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the System's staff. This information includes, but is not limited to, System benefit provisions as defined by statute, member census data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for the System have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer a reasonable estimate of anticipated experience affecting the System.

A valuation report is only an estimate of the System's financial condition as of a single date. It can neither predict the System's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of System benefits, only the timing of System contributions. While a valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: System experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the System's funded status); and changes in System benefit provisions or applicable law. Due to the limited scope of this assignment, we did not perform an analysis of the potential range of future measurements. The Board has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in September 2015.

Some of the actuarial computations presented in this report are for purposes of determining the contribution rates effective from July 2017 to June 2019 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.



September 2016
Eugene Water & Electric Board/2132

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the System. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

Additional information is provided in the system-wide actuarial valuation report.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Larrabee".

Matt Larrabee, FSA, EA, MAAA
Principal and Consulting Actuary

A handwritten signature in black ink, appearing to read "Scott Preppernau".

Scott Preppernau, FSA, EA, MAAA
Principal and Consulting Actuary



ACTUARIAL VALUATION REPORT DECEMBER 31, 2015

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

INDEPENDENT EMPLOYERS

Eugene Water & Electric Board -- #2132

September 2016

CONTENTS

Executive Summary **1**

Employer Contribution Rates 1

Accounting Information 3

Principal Valuation Results 5

 ▪ Employer 5

 ▪ Tier 1/Tier 2 6

 ▪ OPSRP 7

 ▪ Retiree Healthcare 7

Side Account Information **8**

Tier 1/Tier 2 Valuation Results **10**

Assets 10

Liabilities 11

Unfunded Accrued Liability (UAL) 13

Contribution Rate Development 15

Data **20**

Brief Summary of Actuarial Methods and Assumptions **22**

Brief Summary of Changes in Plan Provisions **24**

Glossary **25**

Executive Summary

Milliman has prepared this report for Eugene Water & Electric Board to:

- Provide summary December 31, 2015 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2017 through June 30, 2019,
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2015, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45. GASB 68 information will be provided separately by PERS and is not included in this report.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2015 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Eugene Water & Electric Board.

Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2017 through June 30, 2019 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

Employer Rates Effective July 1, 2017 for Eugene Water & Electric Board

	Payroll		
	Tier 1/Tier 2	OPSRP General Service	Police & Fire
Pension			
Normal cost rate	14.13%	8.02%	12.79%
Tier 1/Tier 2 UAL rate ¹	12.83%	12.83%	12.83%
OPSRP UAL rate	1.27%	1.27%	1.27%
Side account rate relief	(1.22%)	(1.22%)	(1.22%)
Net pension contribution rate	27.01%	20.90%	25.67%
Retiree Healthcare			
Normal cost rate	0.07%	0.00%	0.00%
UAL rate	0.43%	0.43%	0.43%
Net retiree healthcare rate	0.50%	0.43%	0.43%
Total net employer contribution rate	27.51%	21.33%	26.10%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate.

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 Biennium

The rate collar limits changes in contribution rates, but does not limit changes in rates for individual employers related to side accounts. The table below shows the possible minimum and maximum rates first effective as of July 1, 2019, which will depend on the funded status as of December 31, 2017. If the employer's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2015 is 69%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	26.96%	26.96%
Minimum 2019-2021 Rate	21.57%	16.18%
Maximum 2019-2021 Rate	32.35%	37.74%

Executive Summary

Accounting Information

Milliman is not an accounting or audit firm and cannot provide accounting advice. Milliman is not responsible for the interpretation of, or compliance with, accounting standards; citations to, and descriptions of accounting standards provided in this report are for reference purposes only. The information provided in this section is intended to assist the employer in completing its financial statements, but any accounting determination should be reviewed by your auditor.

Pension

In June 2012 the GASB issued Statement No. 68, which replaced GASB 27 and governs employer financial reporting for fiscal years beginning after June 15, 2014. The new standard replaced many of the key elements of the prior reporting requirements. Under the new rules, employers are required to record a balance sheet liability for their unfunded pension obligations. In addition, the timing and coordination of plan and employer reporting has changed under the new requirements. GASB 68 information for employers will be provided separately by PERS and is not included in this report.

Schedule of Funding Progress

Under GASB 27, the Schedule of Funding Progress for Tier 1/Tier 2 pension liabilities was reported in the Required Supplementary Information. This schedule is no longer required now that GASB 68 has replaced GASB 27. However, for additional information and the sake of historical comparison, the updated schedule is shown below for the last several valuations. For employers with side accounts, the actuarial value of assets in this Schedule includes the value of the employer's side accounts.

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (b - a)	Funded Ratio (a ÷ b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a) ÷ c)
12/31/2010	\$219,929,139	\$301,199,612	\$81,270,473	73%	\$40,283,981	202%
12/31/2011	212,836,317	306,418,228	93,581,912	69%	41,865,384	224%
12/31/2012	229,282,178	296,302,627	67,020,449	77%	42,796,406	157%
12/31/2013	252,345,343	301,660,662	49,315,319	84%	41,130,143	120%
12/31/2014	259,289,461	352,196,617	92,907,156	74%	45,250,685	205%
12/31/2015	250,411,124	356,594,144	106,183,020	70%	44,141,193	241%

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) is a cost-sharing pool under Statement No. 45 of the Governmental Accounting Standards Board (GASB 45). Consequently, each employer reports the contractually required contribution. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 was calculated as a part of this valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
	Tier 1 / Tier 2	OPSRP	
		General Service	Police & Fire
July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern employer financial reporting for retiree healthcare obligations for fiscal years beginning after June 15, 2017. In general, the changes required by GASB 75 parallel those that occurred for pension reporting when GASB 68 replaced GASB 27. Accounting information for reporting under GASB 75 will be provided separately and is not included in this report.

Executive Summary

Principal Valuation Results

A summary of principal valuation results from the current valuation and the prior valuation follows. Any changes in actuarial assumptions, methods or plan provisions between the two valuations are described later in this report. More detailed information can be found in the system-wide actuarial valuation report.

Eugene Water & Electric Board

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
T1/T2 UAL	\$111,296,872	\$98,391,475
Allocated pooled OPSRP UAL	6,275,286	5,173,138
Side account	5,113,852	5,484,319
Net unfunded pension actuarial accrued liability	112,458,306	98,080,294
Combined valuation payroll	44,141,193	45,250,685
Net pension UAL as a percentage of payroll	255%	217%
Calculated side account rate relief	(1.22%)	(1.20%)
Allocated pooled RHIA UAL	\$214,334	\$359,679

In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer's combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.

Executive Summary

Principal Valuation Results (continued)

Tier 1/Tier 2

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
Normal cost	\$2,652,406	\$2,902,026
Tier 1/Tier 2 valuation payroll	18,776,318	20,433,151
Tier 1/Tier 2 pension normal cost rate	14.13%	14.20%
Tier 1/ Tier 2 Actuarial accrued liability	\$356,594,144	\$352,196,617
Actuarial asset value	245,297,272	253,805,142
Tier 1/Tier 2 Unfunded actuarial accrued liability	111,296,872	98,391,475
Tier 1/ Tier 2 Funded status	69%	72%
Combined valuation payroll	\$44,141,193	\$45,250,685
Tier 1/Tier 2 UAL as a percentage of payroll	252%	217%
Tier 1/Tier 2 UAL rate (includes Multnomah Fire District #10)	12.83%	12.32%
Tier 1/Tier 2 active members ¹	195	211
Tier 1/Tier 2 dormant members	71	80
Tier 1/Tier 2 retirees and beneficiaries	604	599

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
General service normal cost	\$342.2	\$301.3
OPSRP general service valuation payroll	4,266.9	3,720.4
General service normal cost rate	8.02%	8.10%
Police and fire normal cost	\$69.9	\$59.6
OPSRP police and fire valuation payroll	546.4	462.3
Police and fire normal cost rate	12.79%	12.90%
Actuarial accrued liability	\$3,742.5	\$3,064.1
Actuarial asset value	2,389.1	2,024.6
Unfunded actuarial accrued liability	1,353.5	1,039.5
Funded status	64%	66%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	14%	11%
UAL rate	1.27%	1.01%

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
RHIA		
Normal cost	\$3.3	\$3.5
Tier 1 / Tier 2 valuation payroll	4,730.8	4,933.1
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	\$465.6	\$468.4
Actuarial asset value	419.3	395.9
Unfunded actuarial accrued liability	46.3	72.5
Funded status	90%	85%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	0%	1%
UAL rate	0.43%	0.43%

Side Account Information

Reconciliation of Side Accounts

The following table reconciles the total side account from the beginning of the year to the end of the year. Side account transfers were calculated by PERS and made on a monthly basis. The amount of these transfers is shown in the table below.

All information in this table has been provided by PERS.

	New	Continuing	Total
1. Side account as of December 31, 2014	N/A	\$5,484,319	\$5,484,319
2. Deposits made during 2015		N/A	
3. Administrative expenses		(1,000)	(1,000)
4. Amount transferred to employer reserves during 2015		(483,817)	(483,817)
5. Side account earnings during 2015		114,350	114,350
6. Side account as of December 31, 2015 (1. + 2. + 3. + 4. + 5.)		\$5,113,852	\$5,113,852

Side Account Information

Side Account Balances

	December 31, 2015	December 31, 2014
Side account 1	\$5,113,852	\$5,484,319
Side account 2	0	0
Side account 3	0	0
Total	\$5,113,852	\$5,484,319

Development of Side Account Rate

The rate relief attributable to an employer's side account is determined by amortizing the side account balance on the valuation date over a fixed period, and expressing the result as a percentage of combined valuation payroll. For side accounts established prior to December 31, 2009, the fixed period ends December 31, 2027. For side accounts established at a later date, the fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2015	December 31, 2014
1. Total side account	\$5,113,852	\$5,484,319
2. Combined valuation payroll	44,141,193	45,250,685
3. Average Amortization factor	9.504	10.118
4. Total side account rate (-1. ÷ 2. ÷ 3.)¹	(1.22%)	(1.20%)

¹ For employers with more than one side account, the Total Side Account Rate is determined by calculating the rate on each side account separately and adding the rates together.

Tier 1/Tier 2 Valuation Results

Assets

A summary of the market value of pension assets, and reconciliation from the prior year are shown below.

Summary of Market Value of Tier 1/Tier 2 Pension Assets

	December 31, 2015	December 31, 2014
1. Member reserves	\$16,764,722	\$18,823,046
2. Employer reserves	97,750,171	94,163,350
3. Benefits in force reserve	130,782,379	140,818,746
4. Total market value of assets (1. + 2. + 3.)	\$245,297,272	\$253,805,142

The market value of member and employer reserves is provided by PERS. The benefits in force reserve provided by PERS is allocated each year among employers in proportion to their liabilities for retired members and beneficiaries.

Reconciliation of Tier 1/Tier 2 Pension Assets

	December 31, 2014 to December 31, 2015
1. Market value of assets at beginning of year	\$253,805,142
2. Regular employer contributions	6,916,384
3. Benefit payments and expense	(23,782,940)
4. Adjustments ¹	2,582,149
5. Interest credited	5,292,719
6. Total transferred from side accounts	483,817
7. Market value of assets at end of year (1. + 2. + 3. + 4. + 5. + 6.)	\$245,297,272

¹ Note the adjustment item above includes a reallocation of the benefits in force reserve, transfers to Multnomah Fire District #10, and other adjustments made by PERS.

Tier 1/Tier 2 Valuation Results

Liabilities

Normal Cost

The normal cost represents the value of benefits assigned to the next year of service by the actuarial cost method. If all actuarial assumptions are met, the normal cost represents the amount that would need to be contributed each year to fund plan benefits. Amounts shown below include assumed administrative expenses, which are allocated pro-rata based on normal cost.

Summary of Normal Cost by Tier/Member Classification

	December 31, 2015	December 31, 2014
Tier 1 Police & Fire	\$0	\$0
Tier 1 General Service	1,193,837	1,396,973
Tier 2 Police & Fire	0	0
Tier 2 General Service	1,458,569	1,505,053
Total	\$2,652,406	\$2,902,026

Change in Tier 1/Tier 2 Normal Cost

The following table shows the impact of the assumption, method, and plan changes on normal cost as of December 31, 2015.

	Before Changes	After Changes	Net Change
Normal Cost	\$2,652,406	\$2,652,406	\$0

Tier 1/Tier 2 Valuation Results

Liabilities

Actuarial Accrued Liability

The actuarial accrued liability represents the value of benefits allocated to service performed before the valuation date by the actuarial cost method. If all actuarial assumptions are met, the actuarial accrued liability represents the amount of assets that would need to be accumulated as of the valuation date to provide for the portion of benefits allocated to service already performed.

Summary of Actuarial Accrued Liability by Tier/Member Classification

	December 31, 2015	December 31, 2014
Active Members		
▪ Tier 1 Police & Fire	\$0	\$0
▪ Tier 1 General Service	31,203,973	35,444,121
▪ Tier 2 Police & Fire	0	0
▪ Tier 2 General Service	25,539,636	24,203,957
▪ Total Active Members	\$56,743,609	\$59,648,078
Dormant Members	17,466,339	19,363,661
Retired Members and Beneficiaries	282,384,196	273,184,878
Total Actuarial Accrued Liability	\$356,594,144	\$352,196,617

Change in Tier 1/Tier 2 Actuarial Accrued Liability

The following table shows the impact of the assumption, method, and plan changes on the actuarial accrued liability as of December 31, 2015.

	Before Changes	After Changes	Net Change
Actuarial Accrued Liability	\$356,594,144	\$356,594,144	\$0

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Summary of UAL

The UAL represents the difference between the assets accumulated and the liability attributed to prior years of service by the cost method.

	December 31, 2015	December 31, 2014
1. Actuarial accrued liability	\$356,594,144	\$352,196,617
2. Actuarial value of assets	245,297,272	253,805,142
3. Unfunded accrued liability (1. – 2.)	111,296,872	98,391,475
4. Funded percentage (2. ÷ 1.)	69%	72%
5. Combined valuation payroll	\$44,141,193	\$45,250,685
6. Unfunded accrued liability as % of combined valuation payroll (3. ÷ 5.)	252%	217%

Reconciliation of UAL Bases

Beginning with the December 31, 2013 actuarial valuation, each odd-year valuation establishes a 20-year closed-period amortization schedule for outstanding Tier 1/Tier 2 UAL amounts. Amortization schedules are calculated based on the total Tier 1/Tier 2 UAL as of that valuation date less the remaining unamortized balance of previously established Tier 1/Tier 2 UAL bases.

Amortization Base	UAL		Interest	UAL		Next Year's Payment
	December 31, 2014	Payment		December 31, 2015		
December 31, 2013	\$54,954,462	\$4,116,439	\$3,957,128	\$54,795,151	\$4,260,567	
December 31, 2015	N/A	N/A	N/A	\$56,501,721	\$4,088,402	
Total				\$111,296,872	\$8,348,969	

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Actuarial Gain or Loss since Prior Valuation

The system-wide actuarial valuation report contains a detailed analysis of gains and losses since the last valuation. The table below shows the gain or loss for the individual employer.

1. Expected actuarial accrued liability	
a. Actuarial accrued liability at December 31, 2014	\$352,196,617
b. Normal cost at December 31, 2014 (excluding assumed expenses)	2,775,645
c. Benefit payments during 2015	(23,599,243)
d. Interest at 7.50% to December 31, 2015	25,633,861
e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)	357,006,880
f. Change in actuarial accrued liability due to assumption, method, and plan changes	0
g. Expected actuarial accrued liability at December 31, 2015 (e. + f.)	357,006,880
2. Actuarial accrued liability at December 31, 2015	356,594,144
3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)	412,736
4. Expected actuarial value of assets	
a. Actuarial value of assets at December 31, 2014	253,805,142
b. Contributions for 2015 ¹	7,400,201
c. Benefit payments and expenses during 2015	(23,782,940)
d. Interest at 7.50% to December 31, 2015	18,421,033
e. Expected actuarial value of assets at December 31, 2015 (a. + b. + c. + d.)	255,843,436
5. Actuarial value of assets at December 31, 2015	245,297,272
6. Gain/(loss) on actuarial value of assets (5. - 4.e.)	(10,546,165)
7. Total actuarial gain/(loss) (3. + 6.)	(\$10,133,429)

Unfunded Accrued Liability Reconciliation

A reconciliation of the Tier 1/Tier 2 UAL from December 31, 2014 is provided below.

1. UAL at December 31, 2014	\$98,391,475
2. Expected increase	2,771,968
3. Liability (gain)/loss	(412,736)
4. Asset (gain)/loss	10,546,165
5. Change due to changes in assumptions, methods, and plan provisions	0
6. UAL at December 31, 2015 (1. + 2. + 3. + 4. + 5.)	\$111,296,872

¹ Includes rate relief from side accounts.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Normal Cost Rate

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

Development of Tier 1/Tier 2 Normal Cost Rate

	December 31, 2015			December 31, 2014		
	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate
Tier 1 Police & Fire	\$0	\$0	0.00%	\$0	\$0	0.00%
Tier 1 General Service	1,193,837	6,882,877	17.35%	1,396,973	8,188,726	17.06%
Tier 2 Police & Fire	0	0	0.00%	0	0	0.00%
Tier 2 General Service	1,458,569	11,893,441	12.26%	1,505,053	12,244,425	12.29%
Total	\$2,652,406	\$18,776,318	14.13%	\$2,902,026	\$20,433,151	14.20%

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Development of Tier 1/Tier 2 UAL Rates

The UAL rate is determined by calculating the next year's scheduled payment to the UAL as a percentage of combined valuation payroll.

	December 31, 2015	December 31, 2014
1. Total Tier 1/Tier 2 UAL	\$111,296,872	\$98,391,475
2. Next year's Tier 1/Tier 2 UAL payment	8,348,969	7,259,493
3. Combined valuation payroll	44,141,193	45,250,685
4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)	18.91%	16.04%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	14.13%	14.20%
b. Tier 1/Tier 2 UAL rate	18.91%	16.04%
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate (a. + b. + c.)	33.19%	30.39%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Adjustments Due to Rate Collar and Minimum Rate Requirements

Employer contribution rates are generally limited to change by no more than the greater of 3 percent of payroll or 20 percent from the current contribution rate. However, if the funded percentage excluding side accounts is below 60 percent or above 140 percent the rate collar doubles in size. If the funded percentage excluding side accounts is between 60 and 70 percent or 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

The table below shows the current contribution rate for the period from July 1, 2015 through June 30, 2017, develops the maximum and minimum contribution rates effective July 1, 2017 based on the collar, and calculates the net adjustment due to the collar and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

1. Current net Tier 1/Tier 2 pension contribution rate		20.85%
2. Employer contribution rate attributable to side accounts		(1.25%)
3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)		22.10%
4. Size of rate collar		
a. 20% of current employer contribution rate (20% x 3.)		4.42%
b. Preliminary size of rate collar (maximum of 3% or a.)		4.42%
c. Funded percentage		69%
d. Size of rate collar (If c. < 60% or c. > 140%, 2 x b. If c. is 70%-130%, b. Otherwise, a graded rate between b. and 2 x b.)		4.86%
5. July 1, 2017 minimum employer contribution rate	(3. – 4.d. but not < 0%)	17.24%
6. July 1, 2017 maximum employer contribution rate	(3. + 4.d.)	26.96%
7. July 1, 2017 total pension rate, before adjustment		33.19%
8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)		(6.23%)
9. July 1, 2017 Tier 1/Tier 2 UAL rate, before collar		18.91%
10. July 1, 2017 Tier 1/Tier 2 UAL rate, after collar	(8. + 9.)	12.68%
11. July 1, 2017 Tier 1/Tier 2 pension rate, after collar		26.96%
12. Tier 1/Tier 2 retiree healthcare rate		0.50%
13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)		0.00%
14. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment		14.13%
15. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)		14.13%
16. July 1, 2017 Tier 1/Tier 2 pension rate, after minimum adjustment	(11. + 13.)	26.96%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Post-Rate Collar)

The table below summarizes the employer's pension contribution rate for Tier 1 /Tier 2 after adjustments for the rate collar and the 6 percent of payroll minimum employer contribution rate.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	14.13%	14.20%
b. Tier 1/Tier 2 UAL rate	12.68%	12.17%
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate <i>(a. + b. + c., minimum of 5.50%)</i>	26.96%	26.52%

Data

Demographic Information

Employer Valuation Payroll

	General Service	Police & Fire	Total
Tier 1	\$6,882,877	\$0	\$6,882,877
Tier 2	11,893,441	0	11,893,441
Tier 1/Tier 2 valuation payroll	18,776,318	0	18,776,318
OPSRP valuation payroll	25,364,875	0	25,364,875
Combined valuation payroll	\$44,141,193	\$0	\$44,141,193

Employer Member Census

	December 31							
	2015				2014			
	Tier 1	Tier 2	OPSRP	Total	Tier 1	Tier 2	OPSRP	Total
Active Members ¹								
General Service	71	124	298	493	82	129	294	505
Police & Fire	0	0	0	0	0	0	0	0
Total	71	124	298	493	82	129	294	505
Active Members with previous service segments with the employer								
General Service	8	9	N/A	17	8	9	N/A	17
Police & Fire	0	0	N/A	0	0	0	N/A	0
Total	8	9	N/A	17	8	9	N/A	17
Dormant Members								
General Service	37	34	37	108	43	37	30	110
Police & Fire	0	0	0	0	0	0	0	0
Total	37	34	37	108	43	37	30	110
Retired Members and Beneficiaries								
General Service	556	47	12	615	574	24	10	608
Police & Fire	1	0	0	1	1	0	0	1
Total	557	47	12	616	575	24	10	609
Grand Total Number of Members	673	214	347	1,234	708	199	334	1,241

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Data

Demographic Information (continued)

Employer Tier 1/Tier 2 Active Members as of December 31, 2015

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
<20										
20-24										
25-29										
30-34										
35-39			10	2						12
40-44		1	11	11	1					24
45-49			16	10	5	2				33
50-54			12	14	11	4	1			42
55-59			13	8	12	13	4	1		51
60-64			6	11	2	2	2	1		24
65-69			4	2	1	1		1		9
70-74										
75+										
Total	0	1	72	58	32	22	7	3	0	195

Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2015

Dormant Members			Retired Members and Beneficiaries		
Age	Count	Average Deferred Monthly Benefit	Age	Count	Average Monthly Benefit
<20			<45		
20-24			45-49	1	2,571
25-29			50-54	6	3,511
30-34			55-59	48	3,472
35-39	1	221	60-64	142	3,251
40-44	4	1,437	65-69	154	3,353
45-49	10	1,717	70-74	89	3,727
50-54	14	1,566	75-79	68	2,722
55-59	23	2,429	80-84	33	2,753
60-64	16	2,522	85-89	24	2,282
65-69	2	1,355	90-94	30	1,470
70-74	1	2,599	95-99	7	1,408
75+			100+	2	833
Total	71	2,065	Total	604	3,123

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2015 valuation can be found in the system-wide actuarial valuation report.

Actuarial Methods and Valuation Procedures

A brief summary of the methods used in this valuation is shown below:

<i>Actuarial cost method</i>	Entry Age Normal.
<i>Amortization Method</i>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. Gains and losses between subsequent odd-year valuations will be amortized as a level percentage of projected combined valuation payroll over a closed 20 year period.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.</p>

Economic Assumptions

A brief summary of the key economic assumptions used in this valuation is shown below:

<i>Net investment return</i>	7.50% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.50% compounded annually on members' regular account balances.</p> <p>7.50% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 6.3% in 2016 to 4.4% in 2094.
<i>Administrative Expenses</i>	<p>\$5.5 million added to OPSRP normal cost.</p> <p>\$33.0 million added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2014 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

There were no changes in actuarial methods and allocation procedures since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA actuarial methods and allocation procedures is provided as part of the system-wide valuation report.

Changes in Assumptions

There were no changes in assumptions since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA assumptions is provided as part of the system-wide valuation report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Glossary

Actuarial Accrued Liability

The portion of the present value of prospective benefits allocated to service and compensation before the valuation date in accordance with the actuarial cost method.

Actuarial Asset Value

The value of assets used in calculating the required contributions. The actuarial asset value may be equal to the fair market value of assets, or it may spread the recognition of certain investment gains or losses over a period of years in accordance with an asset valuation method.

Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disablement and retirement; rates of investment earnings and other relevant items.

Actuarial Cost Method

Sometimes called "funding method," a particular technique used by actuaries to establish the amount and incidence of the annual actuarial cost of pension plan benefits, or normal cost, and the related unfunded actuarial accrued liability. Ordinarily, the annual contribution to the plan comprises the normal cost and an amount for amortization of the unfunded actuarial accrued liability.

Actuarial Gain or (Loss)

A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions, during the period between two actuarial valuation dates, as determined in accordance with a particular actuarial cost method.

Combined Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for both Tier 1/Tier 2 and OPSRP active members. This payroll is used to calculate UAL rates.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

Employer Contribution Rate

Consists of the normal cost rate and the UAL rates, plus adjustments for other items such as side account rate offsets.

Funded Status

The actuarial value of assets expressed as a percentage of the actuarial accrued liability.

Normal Cost

The annual cost allocated to the current year, under the actuarial cost method in use. The normal cost divided by the applicable payroll is the normal cost rate.

OPSRP Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for OPSRP active members. This payroll is used to calculate OPSRP normal cost rates.

Glossary

Pre-SLGRP Liability

The sum of Pre-SLGRP Pooled Liabilities and Transition Liabilities.

Pre-SLGRP Pooled Liability

The difference between the total UAL and the UAL attributable to the SLGRP for a pool of employers that joined the SLGRP. There are currently two pre-SLGRP pools. One was created for State Agencies and Community Colleges when the SLGRP was formed. The other one was created when the Local Government Rate Pool joined the SLGRP.

Present Value

Sometimes called “actuarial present value,” the estimated cost (as of the valuation date) of a series of future payments. The present value is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Rate Collar

A methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution rate and funded status.

Required Supplementary Information (RSI)

Schedules, statistical data, and other information that are an essential part of financial reporting and should be presented with, but are not part of, the basic financial statements of a governmental entity.

Statement No. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions.

Statement No. 68 of the Governmental Accounting Standards Board (GASB 68)

The accounting standard governing a state or local governmental employer’s accounting for pensions for fiscal years beginning after June 15, 2014.

Statement No. 75 of the Governmental Accounting Standards Board (GASB 75)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

The difference between the total UAL and the UAL attributable to the SLGRP for an individual employer that joined the SLGRP or the Local Government Rate Pool.

Unfunded Accrued Liability (UAL)

The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. The UAL is divided by combined valuation payroll and an amortization factor to determine an initial pre-collar UAL rate. The final UAL rate can be adjusted by the rate collar.



Milliman
111 SW Fifth Avenue, Suite 3700
Portland, OR 97204-3654
503 227 0634

This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

September 2016

Evans Valley Fire District #6/2623
Oregon Public Employees Retirement System

Dear Sir or Madam:

As part of our engagement with the Oregon Public Employees Retirement Board, we performed a system-wide actuarial valuation of the Oregon Public Employees Retirement System (“PERS” or “the System”) as of December 31, 2015. The attached report, which is an informational supplement to the system-wide report, provides you with employer-specific contribution rates that will become effective July 1, 2017. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information will be provided separately by PERS and is not included in this report.

This report reflects the System's benefit provisions in effect as of December 31, 2015. The full development of the valuation results for the OPSRP and Retiree Health Insurance Account (RHIA) programs can be found in the separate system-wide actuarial valuation report. Costs of the IAP (Individual Account Program) are not included in this or the system-wide actuarial valuation report. Further, costs of pension obligation bond payments are not included in this or the system-wide actuarial valuation report.

If you have any questions about this report, please contact Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, OPSRP general service, and OPSRP police and fire payroll,
- Information to assist you in completing GASB 45 financial reporting requirements, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- Detailed development of Tier 1/Tier 2 valuation results,
- A brief summary of methods and assumptions, and
- A brief summary of any changes in System benefit provisions.

Additional information is provided in the system-wide actuarial valuation report, which is available at www.oregon.gov/PERS/Pages/section/financial_reports/financials.aspx.



September 2016
Evans Valley Fire District #6/2623

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the System's staff. This information includes, but is not limited to, System benefit provisions as defined by statute, member census data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for the System have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer a reasonable estimate of anticipated experience affecting the System.

A valuation report is only an estimate of the System's financial condition as of a single date. It can neither predict the System's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of System benefits, only the timing of System contributions. While a valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: System experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the System's funded status); and changes in System benefit provisions or applicable law. Due to the limited scope of this assignment, we did not perform an analysis of the potential range of future measurements. The Board has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in September 2015.

Some of the actuarial computations presented in this report are for purposes of determining the contribution rates effective from July 2017 to June 2019 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.



September 2016
Evans Valley Fire District #6/2623

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the System. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

Additional information is provided in the system-wide actuarial valuation report.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Larrabee".

Matt Larrabee, FSA, EA, MAAA
Principal and Consulting Actuary

A handwritten signature in black ink, appearing to read "Scott Preppernau".

Scott Preppernau, FSA, EA, MAAA
Principal and Consulting Actuary



ACTUARIAL VALUATION REPORT DECEMBER 31, 2015

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

INDEPENDENT EMPLOYERS

Evans Valley Fire District #6 -- #2623

September 2016

CONTENTS

- Executive Summary** **1**
- Employer Contribution Rates* 1
- Accounting Information* 3
- Principal Valuation Results* 5
- Employer 5
- Tier 1/Tier 2 6
- OPSRP 7
- Retiree Healthcare 7
- Side Account Information** **8**
- Tier 1/Tier 2 Valuation Results** **10**
- Assets* 10
- Liabilities* 11
- Unfunded Accrued Liability (UAL)* 13
- Contribution Rate Development* 15
- Data** **20**
- Brief Summary of Actuarial Methods and Assumptions** **22**
- Brief Summary of Changes in Plan Provisions** **24**
- Glossary** **25**

Executive Summary

Milliman has prepared this report for Evans Valley Fire District #6 to:

- Provide summary December 31, 2015 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2017 through June 30, 2019,
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2015, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45. GASB 68 information will be provided separately by PERS and is not included in this report.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2015 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Evans Valley Fire District #6.

Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2017 through June 30, 2019 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

Employer Rates Effective July 1, 2017 for Evans Valley Fire District #6

	Payroll		
	Tier 1/Tier 2	OPSRP General Service	OPSRP Police & Fire
Pension			
Normal cost rate	20.49%	8.02%	12.79%
Tier 1/Tier 2 UAL rate ¹	(11.54%)	(11.54%)	(11.54%)
OPSRP UAL rate	1.27%	1.27%	1.27%
Side account rate relief	0.00%	0.00%	0.00%
Net pension contribution rate	10.22%	0.00%	2.52%
Retiree Healthcare			
Normal cost rate	0.07%	0.00%	0.00%
UAL rate	0.43%	0.43%	0.43%
Net retiree healthcare rate	0.50%	0.43%	0.43%
Total net employer contribution rate	10.72%	0.43%	2.95%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate.

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 Biennium

The rate collar limits changes in contribution rates, but does not limit changes in rates for individual employers related to side accounts. The table below shows the possible minimum and maximum rates first effective as of July 1, 2019, which will depend on the funded status as of December 31, 2017. If the employer's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2015 is 133%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	8.95%	8.95%
Minimum 2019-2021 Rate	5.95%	2.95%
Maximum 2019-2021 Rate	11.95%	14.95%

Executive Summary

Accounting Information

Milliman is not an accounting or audit firm and cannot provide accounting advice. Milliman is not responsible for the interpretation of, or compliance with, accounting standards; citations to, and descriptions of accounting standards provided in this report are for reference purposes only. The information provided in this section is intended to assist the employer in completing its financial statements, but any accounting determination should be reviewed by your auditor.

Pension

In June 2012 the GASB issued Statement No. 68, which replaced GASB 27 and governs employer financial reporting for fiscal years beginning after June 15, 2014. The new standard replaced many of the key elements of the prior reporting requirements. Under the new rules, employers are required to record a balance sheet liability for their unfunded pension obligations. In addition, the timing and coordination of plan and employer reporting has changed under the new requirements. GASB 68 information for employers will be provided separately by PERS and is not included in this report.

Schedule of Funding Progress

Under GASB 27, the Schedule of Funding Progress for Tier 1/Tier 2 pension liabilities was reported in the Required Supplementary Information. This schedule is no longer required now that GASB 68 has replaced GASB 27. However, for additional information and the sake of historical comparison, the updated schedule is shown below for the last several valuations. For employers with side accounts, the actuarial value of assets in this Schedule includes the value of the employer's side accounts.

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (b - a)	Funded Ratio (a ÷ b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a) ÷ c)
12/31/2010	\$412,333	\$270,024	(\$142,309)	153%	\$86,211	(165%)
12/31/2011	413,705	290,144	(123,561)	143%	90,266	(137%)
12/31/2012	463,790	306,995	(156,795)	151%	90,027	(174%)
12/31/2013	531,599	328,706	(202,893)	162%	84,680	(240%)
12/31/2014	562,525	400,896	(161,629)	140%	90,352	(179%)
12/31/2015	566,105	426,611	(139,494)	133%	95,709	(146%)

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) is a cost-sharing pool under Statement No. 45 of the Governmental Accounting Standards Board (GASB 45). Consequently, each employer reports the contractually required contribution. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 was calculated as a part of this valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
	Tier 1 / Tier 2	OPSRP	
		General Service	Police & Fire
July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern employer financial reporting for retiree healthcare obligations for fiscal years beginning after June 15, 2017. In general, the changes required by GASB 75 parallel those that occurred for pension reporting when GASB 68 replaced GASB 27. Accounting information for reporting under GASB 75 will be provided separately and is not included in this report.

Executive Summary

Principal Valuation Results

A summary of principal valuation results from the current valuation and the prior valuation follows. Any changes in actuarial assumptions, methods or plan provisions between the two valuations are described later in this report. More detailed information can be found in the system-wide actuarial valuation report.

Evans Valley Fire District #6

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
T1/T2 UAL	(\$139,494)	(\$161,629)
Allocated pooled OPSRP UAL	13,606	10,329
Side account	0	0
Net unfunded pension actuarial accrued liability	(125,888)	(151,300)
Combined valuation payroll	95,709	90,352
Net pension UAL as a percentage of payroll	(132%)	(167%)
Calculated side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	\$465	\$718

In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer’s combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.

Executive Summary

Principal Valuation Results (continued)

Tier 1/Tier 2

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
Normal cost	\$11,377	\$10,924
Tier 1/Tier 2 valuation payroll	55,536	53,398
Tier 1/Tier 2 pension normal cost rate	20.49%	20.46%
Tier 1/ Tier 2 Actuarial accrued liability	\$426,611	\$400,896
Actuarial asset value	566,105	562,525
Tier 1/Tier 2 Unfunded actuarial accrued liability	(139,494)	(161,629)
Tier 1/ Tier 2 Funded status	133%	140%
Combined valuation payroll	\$95,709	\$90,352
Tier 1/Tier 2 UAL as a percentage of payroll	(146%)	(179%)
Tier 1/Tier 2 UAL rate (includes Multnomah Fire District #10)	(11.54%)	(13.37%)
Tier 1/Tier 2 active members ¹	1	1
Tier 1/Tier 2 dormant members	1	1
Tier 1/Tier 2 retirees and beneficiaries	2	2

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
General service normal cost	\$342.2	\$301.3
OPSRP general service valuation payroll	4,266.9	3,720.4
General service normal cost rate	8.02%	8.10%
Police and fire normal cost	\$69.9	\$59.6
OPSRP police and fire valuation payroll	546.4	462.3
Police and fire normal cost rate	12.79%	12.90%
Actuarial accrued liability	\$3,742.5	\$3,064.1
Actuarial asset value	2,389.1	2,024.6
Unfunded actuarial accrued liability	1,353.5	1,039.5
Funded status	64%	66%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	14%	11%
UAL rate	1.27%	1.01%

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
RHIA		
Normal cost	\$3.3	\$3.5
Tier 1 / Tier 2 valuation payroll	4,730.8	4,933.1
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	\$465.6	\$468.4
Actuarial asset value	419.3	395.9
Unfunded actuarial accrued liability	46.3	72.5
Funded status	90%	85%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	0%	1%
UAL rate	0.43%	0.43%

Side Account Information

Reconciliation of Side Accounts

The following table reconciles the total side account from the beginning of the year to the end of the year. Side account transfers were calculated by PERS and made on a monthly basis. The amount of these transfers is shown in the table below.

All information in this table has been provided by PERS.

	New	Continuing	Total
1. Side account as of December 31, 2014	N/A		
2. Deposits made during 2015		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2015			
5. Side account earnings during 2015			
6. Side account as of December 31, 2015 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2015	December 31, 2014
Side account 1	\$0	\$0
Side account 2	0	0
Side account 3	0	0
Total	\$0	\$0

Development of Side Account Rate

The rate relief attributable to an employer's side account is determined by amortizing the side account balance on the valuation date over a fixed period, and expressing the result as a percentage of combined valuation payroll. For side accounts established prior to December 31, 2009, the fixed period ends December 31, 2027. For side accounts established at a later date, the fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2015	December 31, 2014
1. Total side account	\$0	\$0
2. Combined valuation payroll	95,709	90,352
3. Average Amortization factor	9.504	10.118
4. Total side account rate (-1. ÷ 2. ÷ 3.)¹	0.00%	0.00%

¹ For employers with more than one side account, the Total Side Account Rate is determined by calculating the rate on each side account separately and adding the rates together.

Tier 1/Tier 2 Valuation Results

Assets

A summary of the market value of pension assets, and reconciliation from the prior year are shown below.

Summary of Market Value of Tier 1/Tier 2 Pension Assets

	December 31, 2015	December 31, 2014
1. Member reserves	\$66,047	\$63,944
2. Employer reserves	453,139	446,901
3. Benefits in force reserve	46,919	51,680
4. Total market value of assets (1. + 2. + 3.)	\$566,105	\$562,525

The market value of member and employer reserves is provided by PERS. The benefits in force reserve provided by PERS is allocated each year among employers in proportion to their liabilities for retired members and beneficiaries.

Reconciliation of Tier 1/Tier 2 Pension Assets

	December 31, 2014 to December 31, 2015
1. Market value of assets at beginning of year	\$562,525
2. Regular employer contributions	(2,413)
3. Benefit payments and expense	(8,532)
4. Adjustments ¹	3,962
5. Interest credited	10,563
6. Total transferred from side accounts	0
7. Market value of assets at end of year (1. + 2. + 3. + 4. + 5. + 6.)	\$566,105

¹ Note the adjustment item above includes a reallocation of the benefits in force reserve, transfers to Multnomah Fire District #10, and other adjustments made by PERS.

Tier 1/Tier 2 Valuation Results

Liabilities

Normal Cost

The normal cost represents the value of benefits assigned to the next year of service by the actuarial cost method. If all actuarial assumptions are met, the normal cost represents the amount that would need to be contributed each year to fund plan benefits. Amounts shown below include assumed administrative expenses, which are allocated pro-rata based on normal cost.

Summary of Normal Cost by Tier/Member Classification

	December 31, 2015	December 31, 2014
Tier 1 Police & Fire	\$0	\$0
Tier 1 General Service	0	0
Tier 2 Police & Fire	11,377	10,924
Tier 2 General Service	0	0
Total	\$11,377	\$10,924

Change in Tier 1/Tier 2 Normal Cost

The following table shows the impact of the assumption, method, and plan changes on normal cost as of December 31, 2015.

	Before Changes	After Changes	Net Change
Normal Cost	\$11,377	\$11,377	\$0

Tier 1/Tier 2 Valuation Results

Liabilities

Actuarial Accrued Liability

The actuarial accrued liability represents the value of benefits allocated to service performed before the valuation date by the actuarial cost method. If all actuarial assumptions are met, the actuarial accrued liability represents the amount of assets that would need to be accumulated as of the valuation date to provide for the portion of benefits allocated to service already performed.

Summary of Actuarial Accrued Liability by Tier/Member Classification

	December 31, 2015	December 31, 2014
Active Members		
▪ Tier 1 Police & Fire	\$29,103	\$27,595
▪ Tier 1 General Service	0	0
▪ Tier 2 Police & Fire	252,437	229,865
▪ Tier 2 General Service	0	0
▪ Total Active Members	\$281,540	\$257,460
Dormant Members	43,765	43,178
Retired Members and Beneficiaries	101,306	100,258
Total Actuarial Accrued Liability	\$426,611	\$400,896

Change in Tier 1/Tier 2 Actuarial Accrued Liability

The following table shows the impact of the assumption, method, and plan changes on the actuarial accrued liability as of December 31, 2015.

	Before Changes	After Changes	Net Change
Actuarial Accrued Liability	\$426,611	\$426,611	\$0

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Summary of UAL

The UAL represents the difference between the assets accumulated and the liability attributed to prior years of service by the cost method.

	December 31, 2015	December 31, 2014
1. Actuarial accrued liability	\$426,611	\$400,896
2. Actuarial value of assets	566,105	562,525
3. Unfunded accrued liability (1. – 2.)	(139,494)	(161,629)
4. Funded percentage (2. ÷ 1.)	133%	140%
5. Combined valuation payroll	\$95,709	\$90,352
6. Unfunded accrued liability as % of combined valuation payroll (3. ÷ 5.)	(146%)	(179%)

Reconciliation of UAL Bases

Beginning with the December 31, 2013 actuarial valuation, each odd-year valuation establishes a 20-year closed-period amortization schedule for outstanding Tier 1/Tier 2 UAL amounts. Amortization schedules are calculated based on the total Tier 1/Tier 2 UAL as of that valuation date less the remaining unamortized balance of previously established Tier 1/Tier 2 UAL bases.

Amortization Base	UAL December 31, 2014	Payment	Interest	UAL December 31, 2015	Next Year's Payment
December 31, 2013	(\$203,326)	(\$15,230)	(\$14,641)	(\$202,737)	(\$15,764)
December 31, 2015	N/A	N/A	N/A	\$63,243	\$4,576
Total				(\$139,494)	(\$11,188)

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Actuarial Gain or Loss since Prior Valuation

The system-wide actuarial valuation report contains a detailed analysis of gains and losses since the last valuation. The table below shows the gain or loss for the individual employer.

1. Expected actuarial accrued liability	
a. Actuarial accrued liability at December 31, 2014	\$400,896
b. Normal cost at December 31, 2014 (excluding assumed expenses)	10,450
c. Benefit payments during 2015	(8,466)
d. Interest at 7.50% to December 31, 2015	30,142
e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)	433,022
f. Change in actuarial accrued liability due to assumption, method, and plan changes	0
g. Expected actuarial accrued liability at December 31, 2015 (e. + f.)	433,022
2. Actuarial accrued liability at December 31, 2015	426,611
3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)	6,411
4. Expected actuarial value of assets	
a. Actuarial value of assets at December 31, 2014	562,525
b. Contributions for 2015 ¹	(2,413)
c. Benefit payments and expenses during 2015	(8,532)
d. Interest at 7.50% to December 31, 2015	41,779
e. Expected actuarial value of assets at December 31, 2015 (a. + b. + c. + d.)	593,359
5. Actuarial value of assets at December 31, 2015	566,105
6. Gain/(loss) on actuarial value of assets (5. - 4.e.)	(27,254)
7. Total actuarial gain/(loss) (3. + 6.)	(\$20,843)

Unfunded Accrued Liability Reconciliation

A reconciliation of the Tier 1/Tier 2 UAL from December 31, 2014 is provided below.

1. UAL at December 31, 2014	(\$161,629)
2. Expected increase	1,292
3. Liability (gain)/loss	(6,411)
4. Asset (gain)/loss	27,254
5. Change due to changes in assumptions, methods, and plan provisions	0
6. UAL at December 31, 2015 (1. + 2. + 3. + 4. + 5.)	(\$139,494)

¹ Includes rate relief from side accounts.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Normal Cost Rate

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

Development of Tier 1/Tier 2 Normal Cost Rate

	December 31, 2015			December 31, 2014		
	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate
Tier 1 Police & Fire	\$0	\$0	0.00%	\$0	\$0	0.00%
Tier 1 General Service	0	0	0.00%	0	0	0.00%
Tier 2 Police & Fire	11,377	55,536	20.49%	10,924	53,398	20.46%
Tier 2 General Service	0	0	0.00%	0	0	0.00%
Total	\$11,377	\$55,536	20.49%	\$10,924	\$53,398	20.46%

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Development of Tier 1/Tier 2 UAL Rates

The UAL rate is determined by calculating the next year's scheduled payment to the UAL as a percentage of combined valuation payroll.

	December 31, 2015	December 31, 2014
1. Total Tier 1/Tier 2 UAL	(\$139,494)	(\$161,629)
2. Next year's Tier 1/Tier 2 UAL payment	(11,188)	(12,213)
3. Combined valuation payroll	95,709	90,352
4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)	(11.69%)	(13.52%)

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	20.49%	20.46%
b. Tier 1/Tier 2 UAL rate	(11.69%)	(13.52%)
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate (a. + b. + c.)	8.95%	7.09%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Adjustments Due to Rate Collar and Minimum Rate Requirements

Employer contribution rates are generally limited to change by no more than the greater of 3 percent of payroll or 20 percent from the current contribution rate. However, if the funded percentage excluding side accounts is below 60 percent or above 140 percent the rate collar doubles in size. If the funded percentage excluding side accounts is between 60 and 70 percent or 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

The table below shows the current contribution rate for the period from July 1, 2015 through June 30, 2017, develops the maximum and minimum contribution rates effective July 1, 2017 based on the collar, and calculates the net adjustment due to the collar and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

1. Current net Tier 1/Tier 2 pension contribution rate		5.47%
2. Employer contribution rate attributable to side accounts		0.00%
3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)		5.47%
4. Size of rate collar		
a. 20% of current employer contribution rate (20% x 3.)		1.09%
b. Preliminary size of rate collar (maximum of 3% or a.)		3.00%
c. Funded percentage		133%
d. Size of rate collar (If c. < 60% or c. > 140%, 2 x b. If c. is 70%-130%, b. Otherwise, a graded rate between b. and 2 x b.)		3.90%
5. July 1, 2017 minimum employer contribution rate	(3. – 4.d. but not < 0%)	1.57%
6. July 1, 2017 maximum employer contribution rate	(3. + 4.d.)	9.37%
7. July 1, 2017 total pension rate, before adjustment		8.95%
8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)		0.00%
9. July 1, 2017 Tier 1/Tier 2 UAL rate, before collar		(11.69%)
10. July 1, 2017 Tier 1/Tier 2 UAL rate, after collar	(8. + 9.)	(11.69%)
11. July 1, 2017 Tier 1/Tier 2 pension rate, after collar		8.95%
12. Tier 1/Tier 2 retiree healthcare rate		0.50%
13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)		0.00%
14. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment		20.49%
15. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)		20.49%
16. July 1, 2017 Tier 1/Tier 2 pension rate, after minimum adjustment	(11. + 13.)	8.95%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Post-Rate Collar)

The table below summarizes the employer's pension contribution rate for Tier 1 /Tier 2 after adjustments for the rate collar and the 6 percent of payroll minimum employer contribution rate.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	20.49%	20.46%
b. Tier 1/Tier 2 UAL rate	(11.69%)	(13.52%)
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate <i>(a. + b. + c., minimum of 5.50%)</i>	8.95%	7.09%

Data

Demographic Information

Employer Valuation Payroll

	General Service	Police & Fire	Total
Tier 1	\$0	\$0	\$0
Tier 2	0	55,536	55,536
Tier 1/Tier 2 valuation payroll	0	55,536	55,536
OPSRP valuation payroll	0	40,173	40,173
Combined valuation payroll	\$0	\$95,709	\$95,709

Employer Member Census

	December 31							
	2015				2014			
	Tier 1	Tier 2	OPSRP	Total	Tier 1	Tier 2	OPSRP	Total
Active Members ¹								
General Service	0	0	0	0	0	0	0	0
Police & Fire	0	1	1	2	0	1	1	2
Total	0	1	1	2	0	1	1	2
Active Members with previous service segments with the employer								
General Service	0	0	N/A	0	0	0	N/A	0
Police & Fire	1	0	N/A	1	1	0	N/A	1
Total	1	0	N/A	1	1	0	N/A	1
Dormant Members								
General Service	0	0	0	0	0	0	0	0
Police & Fire	0	1	0	1	0	1	0	1
Total	0	1	0	1	0	1	0	1
Retired Members and Beneficiaries								
General Service	0	0	0	0	0	0	0	0
Police & Fire	2	0	0	2	2	0	0	2
Total	2	0	0	2	2	0	0	2
Grand Total Number of Members	3	2	1	6	3	2	1	6

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Data

Demographic Information (continued)

Employer Tier 1/Tier 2 Active Members as of December 31, 2015

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
<20										
20-24										
25-29										
30-34										
35-39										
40-44										
45-49										
50-54										
55-59				1						1
60-64										
65-69										
70-74										
75+										
Total	0	0	0	1	0	0	0	0	0	1

Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2015

Dormant Members			Retired Members and Beneficiaries		
Age	Count	Average Deferred Monthly Benefit	Age	Count	Average Monthly Benefit
<20			<45		
20-24			45-49		
25-29			50-54		
30-34			55-59		
35-39			60-64	2	265
40-44	1	615	65-69		
45-49			70-74		
50-54			75-79		
55-59			80-84		
60-64			85-89		
65-69			90-94		
70-74			95-99		
75+			100+		
Total	1	615	Total	2	265

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2015 valuation can be found in the system-wide actuarial valuation report.

Actuarial Methods and Valuation Procedures

A brief summary of the methods used in this valuation is shown below:

<i>Actuarial cost method</i>	Entry Age Normal.
<i>Amortization Method</i>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. Gains and losses between subsequent odd-year valuations will be amortized as a level percentage of projected combined valuation payroll over a closed 20 year period.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.</p>

Economic Assumptions

A brief summary of the key economic assumptions used in this valuation is shown below:

<i>Net investment return</i>	7.50% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.50% compounded annually on members' regular account balances.</p> <p>7.50% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 6.3% in 2016 to 4.4% in 2094.
<i>Administrative Expenses</i>	<p>\$5.5 million added to OPSRP normal cost.</p> <p>\$33.0 million added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2014 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

There were no changes in actuarial methods and allocation procedures since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA actuarial methods and allocation procedures is provided as part of the system-wide valuation report.

Changes in Assumptions

There were no changes in assumptions since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA assumptions is provided as part of the system-wide valuation report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Glossary

Actuarial Accrued Liability

The portion of the present value of prospective benefits allocated to service and compensation before the valuation date in accordance with the actuarial cost method.

Actuarial Asset Value

The value of assets used in calculating the required contributions. The actuarial asset value may be equal to the fair market value of assets, or it may spread the recognition of certain investment gains or losses over a period of years in accordance with an asset valuation method.

Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disablement and retirement; rates of investment earnings and other relevant items.

Actuarial Cost Method

Sometimes called "funding method," a particular technique used by actuaries to establish the amount and incidence of the annual actuarial cost of pension plan benefits, or normal cost, and the related unfunded actuarial accrued liability. Ordinarily, the annual contribution to the plan comprises the normal cost and an amount for amortization of the unfunded actuarial accrued liability.

Actuarial Gain or (Loss)

A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions, during the period between two actuarial valuation dates, as determined in accordance with a particular actuarial cost method.

Combined Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for both Tier 1/Tier 2 and OPSRP active members. This payroll is used to calculate UAL rates.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

Employer Contribution Rate

Consists of the normal cost rate and the UAL rates, plus adjustments for other items such as side account rate offsets.

Funded Status

The actuarial value of assets expressed as a percentage of the actuarial accrued liability.

Normal Cost

The annual cost allocated to the current year, under the actuarial cost method in use. The normal cost divided by the applicable payroll is the normal cost rate.

OPSRP Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for OPSRP active members. This payroll is used to calculate OPSRP normal cost rates.

Glossary

Pre-SLGRP Liability

The sum of Pre-SLGRP Pooled Liabilities and Transition Liabilities.

Pre-SLGRP Pooled Liability

The difference between the total UAL and the UAL attributable to the SLGRP for a pool of employers that joined the SLGRP. There are currently two pre-SLGRP pools. One was created for State Agencies and Community Colleges when the SLGRP was formed. The other one was created when the Local Government Rate Pool joined the SLGRP.

Present Value

Sometimes called “actuarial present value,” the estimated cost (as of the valuation date) of a series of future payments. The present value is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Rate Collar

A methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution rate and funded status.

Required Supplementary Information (RSI)

Schedules, statistical data, and other information that are an essential part of financial reporting and should be presented with, but are not part of, the basic financial statements of a governmental entity.

Statement No. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions.

Statement No. 68 of the Governmental Accounting Standards Board (GASB 68)

The accounting standard governing a state or local governmental employer’s accounting for pensions for fiscal years beginning after June 15, 2014.

Statement No. 75 of the Governmental Accounting Standards Board (GASB 75)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

The difference between the total UAL and the UAL attributable to the SLGRP for an individual employer that joined the SLGRP or the Local Government Rate Pool.

Unfunded Accrued Liability (UAL)

The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. The UAL is divided by combined valuation payroll and an amortization factor to determine an initial pre-collar UAL rate. The final UAL rate can be adjusted by the rate collar.



Milliman
111 SW Fifth Avenue, Suite 3700
Portland, OR 97204-3654
503 227 0634

This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

September 2016

Fern Ridge Community Library/2785
Oregon Public Employees Retirement System

Dear Sir or Madam:

As part of our engagement with the Oregon Public Employees Retirement Board, we performed a system-wide actuarial valuation of the Oregon Public Employees Retirement System (“PERS” or “the System”) as of December 31, 2015. The attached report, which is an informational supplement to the system-wide report, provides you with employer-specific contribution rates that will become effective July 1, 2017. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information will be provided separately by PERS and is not included in this report.

This report reflects the System's benefit provisions in effect as of December 31, 2015. The full development of the valuation results for the OPSRP and Retiree Health Insurance Account (RHIA) programs can be found in the separate system-wide actuarial valuation report. Costs of the IAP (Individual Account Program) are not included in this or the system-wide actuarial valuation report. Further, costs of pension obligation bond payments are not included in this or the system-wide actuarial valuation report.

If you have any questions about this report, please contact Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, OPSRP general service, and OPSRP police and fire payroll,
- Information to assist you in completing GASB 45 financial reporting requirements, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- Detailed development of Tier 1/Tier 2 valuation results,
- A brief summary of methods and assumptions, and
- A brief summary of any changes in System benefit provisions.

Additional information is provided in the system-wide actuarial valuation report, which is available at www.oregon.gov/PERS/Pages/section/financial_reports/financials.aspx.



September 2016
Fern Ridge Community Library/2785

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the System's staff. This information includes, but is not limited to, System benefit provisions as defined by statute, member census data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for the System have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer a reasonable estimate of anticipated experience affecting the System.

A valuation report is only an estimate of the System's financial condition as of a single date. It can neither predict the System's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of System benefits, only the timing of System contributions. While a valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: System experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the System's funded status); and changes in System benefit provisions or applicable law. Due to the limited scope of this assignment, we did not perform an analysis of the potential range of future measurements. The Board has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in September 2015.

Some of the actuarial computations presented in this report are for purposes of determining the contribution rates effective from July 2017 to June 2019 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.



September 2016
Fern Ridge Community Library/2785

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the System. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

Additional information is provided in the system-wide actuarial valuation report.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Larrabee".

Matt Larrabee, FSA, EA, MAAA
Principal and Consulting Actuary

A handwritten signature in black ink, appearing to read "Scott Preppernau".

Scott Preppernau, FSA, EA, MAAA
Principal and Consulting Actuary



ACTUARIAL VALUATION REPORT DECEMBER 31, 2015

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

INDEPENDENT EMPLOYERS

Fern Ridge Community Library -- #2785

September 2016

CONTENTS

Executive Summary	1
<i>Employer Contribution Rates</i>	1
<i>Accounting Information</i>	3
<i>Principal Valuation Results</i>	5
▪ Employer	5
▪ Tier 1/Tier 2	6
▪ OPSRP	7
▪ Retiree Healthcare	7
Side Account Information	8
Tier 1/Tier 2 Valuation Results	10
<i>Assets</i>	10
<i>Liabilities</i>	11
<i>Unfunded Accrued Liability (UAL)</i>	13
<i>Contribution Rate Development</i>	15
Data	20
Brief Summary of Actuarial Methods and Assumptions	22
Brief Summary of Changes in Plan Provisions	24
Glossary	25

Executive Summary

Milliman has prepared this report for Fern Ridge Community Library to:

- Provide summary December 31, 2015 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2017 through June 30, 2019,
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2015, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45. GASB 68 information will be provided separately by PERS and is not included in this report.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2015 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to Fern Ridge Community Library.

Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2017 through June 30, 2019 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

Employer Rates Effective July 1, 2017 for Fern Ridge Community Library

	Payroll		
	Tier 1/Tier 2	OPSRP General Service	Police & Fire
Pension			
Normal cost rate	17.46%	8.02%	12.79%
Tier 1/Tier 2 UAL rate ¹	(8.28%)	(8.28%)	(8.28%)
OPSRP UAL rate	1.27%	1.27%	1.27%
Side account rate relief	0.00%	0.00%	0.00%
Net pension contribution rate	10.45%	1.01%	5.78%
Retiree Healthcare			
Normal cost rate	0.07%	0.00%	0.00%
UAL rate	0.43%	0.43%	0.43%
Net retiree healthcare rate	0.50%	0.43%	0.43%
Total net employer contribution rate	10.95%	1.44%	6.21%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate.

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 Biennium

The rate collar limits changes in contribution rates, but does not limit changes in rates for individual employers related to side accounts. The table below shows the possible minimum and maximum rates first effective as of July 1, 2019, which will depend on the funded status as of December 31, 2017. If the employer's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2015 is 133%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	9.18%	9.18%
Minimum 2019-2021 Rate	6.18%	3.18%
Maximum 2019-2021 Rate	12.18%	15.18%

Executive Summary

Accounting Information

Milliman is not an accounting or audit firm and cannot provide accounting advice. Milliman is not responsible for the interpretation of, or compliance with, accounting standards; citations to, and descriptions of accounting standards provided in this report are for reference purposes only. The information provided in this section is intended to assist the employer in completing its financial statements, but any accounting determination should be reviewed by your auditor.

Pension

In June 2012 the GASB issued Statement No. 68, which replaced GASB 27 and governs employer financial reporting for fiscal years beginning after June 15, 2014. The new standard replaced many of the key elements of the prior reporting requirements. Under the new rules, employers are required to record a balance sheet liability for their unfunded pension obligations. In addition, the timing and coordination of plan and employer reporting has changed under the new requirements. GASB 68 information for employers will be provided separately by PERS and is not included in this report.

Schedule of Funding Progress

Under GASB 27, the Schedule of Funding Progress for Tier 1/Tier 2 pension liabilities was reported in the Required Supplementary Information. This schedule is no longer required now that GASB 68 has replaced GASB 27. However, for additional information and the sake of historical comparison, the updated schedule is shown below for the last several valuations. For employers with side accounts, the actuarial value of assets in this Schedule includes the value of the employer's side accounts.

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (b - a)	Funded Ratio (a ÷ b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a) ÷ c)
12/31/2010	\$353,205	\$385,193	\$31,988	92%	\$181,132	18%
12/31/2011	368,747	416,146	47,399	89%	185,052	26%
12/31/2012	421,995	461,969	39,974	91%	175,148	23%
12/31/2013	477,134	321,246	(155,888)	149%	181,171	(86%)
12/31/2014	502,692	369,684	(133,008)	136%	192,570	(69%)
12/31/2015	547,918	411,856	(136,062)	133%	126,701	(107%)

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) is a cost-sharing pool under Statement No. 45 of the Governmental Accounting Standards Board (GASB 45). Consequently, each employer reports the contractually required contribution. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 was calculated as a part of this valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
	Tier 1 / Tier 2	OPSRP	
		General Service	Police & Fire
July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern employer financial reporting for retiree healthcare obligations for fiscal years beginning after June 15, 2017. In general, the changes required by GASB 75 parallel those that occurred for pension reporting when GASB 68 replaced GASB 27. Accounting information for reporting under GASB 75 will be provided separately and is not included in this report.

Executive Summary

Principal Valuation Results

A summary of principal valuation results from the current valuation and the prior valuation follows. Any changes in actuarial assumptions, methods or plan provisions between the two valuations are described later in this report. More detailed information can be found in the system-wide actuarial valuation report.

Fern Ridge Community Library

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
T1/T2 UAL	(\$136,062)	(\$133,007)
Allocated pooled OPSRP UAL	18,012	22,015
Side account	0	0
Net unfunded pension actuarial accrued liability	(118,050)	(110,992)
Combined valuation payroll	126,701	192,570
Net pension UAL as a percentage of payroll	(93%)	(58%)
Calculated side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	\$615	\$1,531

In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer’s combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.

Executive Summary

Principal Valuation Results (continued)

Tier 1/Tier 2

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
Normal cost	\$4,216	\$10,767
Tier 1/Tier 2 valuation payroll	24,148	46,781
Tier 1/Tier 2 pension normal cost rate	17.46%	23.02%
Tier 1/ Tier 2 Actuarial accrued liability	\$411,856	\$369,684
Actuarial asset value	547,918	502,692
Tier 1/Tier 2 Unfunded actuarial accrued liability	(136,062)	(133,007)
Tier 1/ Tier 2 Funded status	133%	136%
Combined valuation payroll	\$126,701	\$192,570
Tier 1/Tier 2 UAL as a percentage of payroll	(107%)	(69%)
Tier 1/Tier 2 UAL rate	(8.28%)	(9.20%)
(includes Multnomah Fire District #10)		
Tier 1/Tier 2 active members ¹	2	3
Tier 1/Tier 2 dormant members	2	2
Tier 1/Tier 2 retirees and beneficiaries	4	3

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
General service normal cost	\$342.2	\$301.3
OPSRP general service valuation payroll	4,266.9	3,720.4
General service normal cost rate	8.02%	8.10%
Police and fire normal cost	\$69.9	\$59.6
OPSRP police and fire valuation payroll	546.4	462.3
Police and fire normal cost rate	12.79%	12.90%
Actuarial accrued liability	\$3,742.5	\$3,064.1
Actuarial asset value	2,389.1	2,024.6
Unfunded actuarial accrued liability	1,353.5	1,039.5
Funded status	64%	66%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	14%	11%
UAL rate	1.27%	1.01%

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
RHIA		
Normal cost	\$3.3	\$3.5
Tier 1 / Tier 2 valuation payroll	4,730.8	4,933.1
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	\$465.6	\$468.4
Actuarial asset value	419.3	395.9
Unfunded actuarial accrued liability	46.3	72.5
Funded status	90%	85%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	0%	1%
UAL rate	0.43%	0.43%

Side Account Information

Reconciliation of Side Accounts

The following table reconciles the total side account from the beginning of the year to the end of the year. Side account transfers were calculated by PERS and made on a monthly basis. The amount of these transfers is shown in the table below.

All information in this table has been provided by PERS.

	New	Continuing	Total
1. Side account as of December 31, 2014	N/A		
2. Deposits made during 2015		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2015			
5. Side account earnings during 2015			
6. Side account as of December 31, 2015 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2015	December 31, 2014
Side account 1	\$0	\$0
Side account 2	0	0
Side account 3	0	0
Total	\$0	\$0

Development of Side Account Rate

The rate relief attributable to an employer's side account is determined by amortizing the side account balance on the valuation date over a fixed period, and expressing the result as a percentage of combined valuation payroll. For side accounts established prior to December 31, 2009, the fixed period ends December 31, 2027. For side accounts established at a later date, the fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2015	December 31, 2014
1. Total side account	\$0	\$0
2. Combined valuation payroll	126,701	192,570
3. Average Amortization factor	9.504	10.118
4. Total side account rate (-1. ÷ 2. ÷ 3.)¹	0.00%	0.00%

¹ For employers with more than one side account, the Total Side Account Rate is determined by calculating the rate on each side account separately and adding the rates together.

Tier 1/Tier 2 Valuation Results

Assets

A summary of the market value of pension assets, and reconciliation from the prior year are shown below.

Summary of Market Value of Tier 1/Tier 2 Pension Assets

	December 31, 2015	December 31, 2014
1. Member reserves	\$55,526	\$82,231
2. Employer reserves	392,702	386,103
3. Benefits in force reserve	99,690	34,357
4. Total market value of assets (1. + 2. + 3.)	\$547,918	\$502,692

The market value of member and employer reserves is provided by PERS. The benefits in force reserve provided by PERS is allocated each year among employers in proportion to their liabilities for retired members and beneficiaries.

Reconciliation of Tier 1/Tier 2 Pension Assets

	December 31, 2014 to December 31, 2015
1. Market value of assets at beginning of year	\$502,692
2. Regular employer contributions	(738)
3. Benefit payments and expense	(18,129)
4. Adjustments ¹	53,211
5. Interest credited	10,882
6. Total transferred from side accounts	0
7. Market value of assets at end of year (1. + 2. + 3. + 4. + 5. + 6.)	\$547,918

¹ Note the adjustment item above includes a reallocation of the benefits in force reserve, transfers to Multnomah Fire District #10, and other adjustments made by PERS.

Tier 1/Tier 2 Valuation Results

Liabilities

Normal Cost

The normal cost represents the value of benefits assigned to the next year of service by the actuarial cost method. If all actuarial assumptions are met, the normal cost represents the amount that would need to be contributed each year to fund plan benefits. Amounts shown below include assumed administrative expenses, which are allocated pro-rata based on normal cost.

Summary of Normal Cost by Tier/Member Classification

	December 31, 2015	December 31, 2014
Tier 1 Police & Fire	\$0	\$0
Tier 1 General Service	0	6,472
Tier 2 Police & Fire	0	0
Tier 2 General Service	4,216	4,295
Total	\$4,216	\$10,767

Change in Tier 1/Tier 2 Normal Cost

The following table shows the impact of the assumption, method, and plan changes on normal cost as of December 31, 2015.

	Before Changes	After Changes	Net Change
Normal Cost	\$4,216	\$4,216	\$0

Tier 1/Tier 2 Valuation Results

Liabilities

Actuarial Accrued Liability

The actuarial accrued liability represents the value of benefits allocated to service performed before the valuation date by the actuarial cost method. If all actuarial assumptions are met, the actuarial accrued liability represents the amount of assets that would need to be accumulated as of the valuation date to provide for the portion of benefits allocated to service already performed.

Summary of Actuarial Accrued Liability by Tier/Member Classification

	December 31, 2015	December 31, 2014
Active Members		
▪ Tier 1 Police & Fire	\$0	\$0
▪ Tier 1 General Service	58,055	177,895
▪ Tier 2 Police & Fire	0	0
▪ Tier 2 General Service	63,871	54,270
▪ Total Active Members	\$121,926	\$232,165
Dormant Members	74,680	70,866
Retired Members and Beneficiaries	215,250	66,653
Total Actuarial Accrued Liability	\$411,856	\$369,684

Change in Tier 1/Tier 2 Actuarial Accrued Liability

The following table shows the impact of the assumption, method, and plan changes on the actuarial accrued liability as of December 31, 2015.

	Before Changes	After Changes	Net Change
Actuarial Accrued Liability	\$411,856	\$411,856	\$0

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Summary of UAL

The UAL represents the difference between the assets accumulated and the liability attributed to prior years of service by the cost method.

	December 31, 2015	December 31, 2014
1. Actuarial accrued liability	\$411,856	\$369,684
2. Actuarial value of assets	547,918	502,692
3. Unfunded accrued liability (1. – 2.)	(136,062)	(133,007)
4. Funded percentage (2. ÷ 1.)	133%	136%
5. Combined valuation payroll	\$126,701	\$192,570
6. Unfunded accrued liability as % of combined valuation payroll (3. ÷ 5.)	(107%)	(69%)

Reconciliation of UAL Bases

Beginning with the December 31, 2013 actuarial valuation, each odd-year valuation establishes a 20-year closed-period amortization schedule for outstanding Tier 1/Tier 2 UAL amounts. Amortization schedules are calculated based on the total Tier 1/Tier 2 UAL as of that valuation date less the remaining unamortized balance of previously established Tier 1/Tier 2 UAL bases.

Amortization Base	UAL December 31, 2014	Payment	Interest	UAL December 31, 2015	Next Year's Payment
December 31, 2013	(\$156,221)	(\$11,702)	(\$11,249)	(\$155,768)	(\$12,112)
December 31, 2015	N/A	N/A	N/A	\$19,706	\$1,426
Total				(\$136,062)	(\$10,686)

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Actuarial Gain or Loss since Prior Valuation

The system-wide actuarial valuation report contains a detailed analysis of gains and losses since the last valuation. The table below shows the gain or loss for the individual employer.

1. Expected actuarial accrued liability	
a. Actuarial accrued liability at December 31, 2014	\$369,684
b. Normal cost at December 31, 2014 (excluding assumed expenses)	10,300
c. Benefit payments during 2015	(17,989)
d. Interest at 7.50% to December 31, 2015	27,438
e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)	389,433
f. Change in actuarial accrued liability due to assumption, method, and plan changes	0
g. Expected actuarial accrued liability at December 31, 2015 (e. + f.)	389,433
2. Actuarial accrued liability at December 31, 2015	411,856
3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)	(22,423)
4. Expected actuarial value of assets	
a. Actuarial value of assets at December 31, 2014	502,692
b. Contributions for 2015 ¹	(738)
c. Benefit payments and expenses during 2015	(18,129)
d. Interest at 7.50% to December 31, 2015	36,994
e. Expected actuarial value of assets at December 31, 2015 (a. + b. + c. + d.)	520,819
5. Actuarial value of assets at December 31, 2015	547,918
6. Gain/(loss) on actuarial value of assets (5. - 4.e.)	27,099
7. Total actuarial gain/(loss) (3. + 6.)	\$4,676

Unfunded Accrued Liability Reconciliation

A reconciliation of the Tier 1/Tier 2 UAL from December 31, 2014 is provided below.

1. UAL at December 31, 2014	(\$133,007)
2. Expected increase	1,621
3. Liability (gain)/loss	22,423
4. Asset (gain)/loss	(27,099)
5. Change due to changes in assumptions, methods, and plan provisions	0
6. UAL at December 31, 2015 (1. + 2. + 3. + 4. + 5.)	(\$136,062)

¹ Includes rate relief from side accounts.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Normal Cost Rate

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

Development of Tier 1/Tier 2 Normal Cost Rate

	December 31, 2015			December 31, 2014		
	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate
Tier 1 Police & Fire	\$0	\$0	0.00%	\$0	\$0	0.00%
Tier 1 General Service	0	0	0.00%	6,472	32,060	20.19%
Tier 2 Police & Fire	0	0	0.00%	0	0	0.00%
Tier 2 General Service	4,216	24,148	17.46%	4,295	14,721	29.18%
Total	\$4,216	\$24,148	17.46%	\$10,767	\$46,781	23.02%

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Development of Tier 1/Tier 2 UAL Rates

The UAL rate is determined by calculating the next year's scheduled payment to the UAL as a percentage of combined valuation payroll.

	December 31, 2015	December 31, 2014
1. Total Tier 1/Tier 2 UAL	(\$136,062)	(\$133,007)
2. Next year's Tier 1/Tier 2 UAL payment	(10,686)	(10,022)
3. Combined valuation payroll	126,701	192,570
4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)	(8.43%)	(5.20%)

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	17.46%	23.02%
b. Tier 1/Tier 2 UAL rate	(8.43%)	(5.20%)
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate (a. + b. + c.)	9.18%	17.97%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Adjustments Due to Rate Collar and Minimum Rate Requirements

Employer contribution rates are generally limited to change by no more than the greater of 3 percent of payroll or 20 percent from the current contribution rate. However, if the funded percentage excluding side accounts is below 60 percent or above 140 percent the rate collar doubles in size. If the funded percentage excluding side accounts is between 60 and 70 percent or 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

The table below shows the current contribution rate for the period from July 1, 2015 through June 30, 2017, develops the maximum and minimum contribution rates effective July 1, 2017 based on the collar, and calculates the net adjustment due to the collar and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

1. Current net Tier 1/Tier 2 pension contribution rate		9.02%
2. Employer contribution rate attributable to side accounts		0.00%
3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)		9.02%
4. Size of rate collar		
a. 20% of current employer contribution rate (20% x 3.)		1.80%
b. Preliminary size of rate collar (maximum of 3% or a.)		3.00%
c. Funded percentage		133%
d. Size of rate collar (If c. < 60% or c. > 140%, 2 x b. If c. is 70%-130%, b. Otherwise, a graded rate between b. and 2 x b.)		3.90%
5. July 1, 2017 minimum employer contribution rate	(3. – 4.d. but not < 0%)	5.12%
6. July 1, 2017 maximum employer contribution rate	(3. + 4.d.)	12.92%
7. July 1, 2017 total pension rate, before adjustment		9.18%
8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)		0.00%
9. July 1, 2017 Tier 1/Tier 2 UAL rate, before collar		(8.43%)
10. July 1, 2017 Tier 1/Tier 2 UAL rate, after collar	(8. + 9.)	(8.43%)
11. July 1, 2017 Tier 1/Tier 2 pension rate, after collar		9.18%
12. Tier 1/Tier 2 retiree healthcare rate		0.50%
13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)		0.00%
14. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment		17.46%
15. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)		17.46%
16. July 1, 2017 Tier 1/Tier 2 pension rate, after minimum adjustment	(11. + 13.)	9.18%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Post-Rate Collar)

The table below summarizes the employer's pension contribution rate for Tier 1 /Tier 2 after adjustments for the rate collar and the 6 percent of payroll minimum employer contribution rate.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	17.46%	23.02%
b. Tier 1/Tier 2 UAL rate	(8.43%)	(9.35%)
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate <i>(a. + b. + c., minimum of 5.50%)</i>	9.18%	13.82%

Data

Demographic Information

Employer Valuation Payroll

	General Service	Police & Fire	Total
Tier 1	\$0	\$0	\$0
Tier 2	24,148	0	24,148
Tier 1/Tier 2 valuation payroll	24,148	0	24,148
OPSRP valuation payroll	102,553	0	102,553
Combined valuation payroll	\$126,701	\$0	\$126,701

Employer Member Census

	December 31							
	2015				2014			
	Tier 1	Tier 2	OPSRP	Total	Tier 1	Tier 2	OPSRP	Total
Active Members ¹								
General Service	0	2	2	4	1	2	4	7
Police & Fire	0	0	0	0	0	0	0	0
Total	0	2	2	4	1	2	4	7
Active Members with previous service segments with the employer								
General Service	1	0	N/A	1	1	0	N/A	1
Police & Fire	0	0	N/A	0	0	0	N/A	0
Total	1	0	N/A	1	1	0	N/A	1
Dormant Members								
General Service	1	1	2	4	1	1	0	2
Police & Fire	0	0	0	0	0	0	0	0
Total	1	1	2	4	1	1	0	2
Retired Members and Beneficiaries								
General Service	4	0	0	4	3	0	0	3
Police & Fire	0	0	0	0	0	0	0	0
Total	4	0	0	4	3	0	0	3
Grand Total Number of Members	6	3	4	13	6	3	4	13

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Data

Demographic Information (continued)

Employer Tier 1/Tier 2 Active Members as of December 31, 2015

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
<20										
20-24										
25-29										
30-34										
35-39										
40-44										
45-49										
50-54										
55-59										
60-64				1						1
65-69										
70-74			1							1
75+										
Total	0	0	1	1	0	0	0	0	0	2

Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2015

Dormant Members			Retired Members and Beneficiaries		
Age	Count	Average Deferred Monthly Benefit	Age	Count	Average Monthly Benefit
<20			<45		
20-24			45-49		
25-29			50-54		
30-34			55-59	1	1
35-39			60-64		
40-44	1	710	65-69	1	866
45-49			70-74	1	293
50-54			75-79	1	182
55-59	1	298	80-84		
60-64			85-89		
65-69			90-94		
70-74			95-99		
75+			100+		
Total	2	504	Total	4	335

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2015 valuation can be found in the system-wide actuarial valuation report.

Actuarial Methods and Valuation Procedures

A brief summary of the methods used in this valuation is shown below:

<i>Actuarial cost method</i>	Entry Age Normal.
<i>Amortization Method</i>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. Gains and losses between subsequent odd-year valuations will be amortized as a level percentage of projected combined valuation payroll over a closed 20 year period.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.</p>

Economic Assumptions

A brief summary of the key economic assumptions used in this valuation is shown below:

<i>Net investment return</i>	7.50% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.50% compounded annually on members' regular account balances.</p> <p>7.50% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 6.3% in 2016 to 4.4% in 2094.
<i>Administrative Expenses</i>	<p>\$5.5 million added to OPSRP normal cost.</p> <p>\$33.0 million added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2014 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

There were no changes in actuarial methods and allocation procedures since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA actuarial methods and allocation procedures is provided as part of the system-wide valuation report.

Changes in Assumptions

There were no changes in assumptions since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA assumptions is provided as part of the system-wide valuation report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Glossary

Actuarial Accrued Liability

The portion of the present value of prospective benefits allocated to service and compensation before the valuation date in accordance with the actuarial cost method.

Actuarial Asset Value

The value of assets used in calculating the required contributions. The actuarial asset value may be equal to the fair market value of assets, or it may spread the recognition of certain investment gains or losses over a period of years in accordance with an asset valuation method.

Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disablement and retirement; rates of investment earnings and other relevant items.

Actuarial Cost Method

Sometimes called "funding method," a particular technique used by actuaries to establish the amount and incidence of the annual actuarial cost of pension plan benefits, or normal cost, and the related unfunded actuarial accrued liability. Ordinarily, the annual contribution to the plan comprises the normal cost and an amount for amortization of the unfunded actuarial accrued liability.

Actuarial Gain or (Loss)

A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions, during the period between two actuarial valuation dates, as determined in accordance with a particular actuarial cost method.

Combined Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for both Tier 1/Tier 2 and OPSRP active members. This payroll is used to calculate UAL rates.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

Employer Contribution Rate

Consists of the normal cost rate and the UAL rates, plus adjustments for other items such as side account rate offsets.

Funded Status

The actuarial value of assets expressed as a percentage of the actuarial accrued liability.

Normal Cost

The annual cost allocated to the current year, under the actuarial cost method in use. The normal cost divided by the applicable payroll is the normal cost rate.

OPSRP Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for OPSRP active members. This payroll is used to calculate OPSRP normal cost rates.

Glossary

Pre-SLGRP Liability

The sum of Pre-SLGRP Pooled Liabilities and Transition Liabilities.

Pre-SLGRP Pooled Liability

The difference between the total UAL and the UAL attributable to the SLGRP for a pool of employers that joined the SLGRP. There are currently two pre-SLGRP pools. One was created for State Agencies and Community Colleges when the SLGRP was formed. The other one was created when the Local Government Rate Pool joined the SLGRP.

Present Value

Sometimes called “actuarial present value,” the estimated cost (as of the valuation date) of a series of future payments. The present value is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Rate Collar

A methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution rate and funded status.

Required Supplementary Information (RSI)

Schedules, statistical data, and other information that are an essential part of financial reporting and should be presented with, but are not part of, the basic financial statements of a governmental entity.

Statement No. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions.

Statement No. 68 of the Governmental Accounting Standards Board (GASB 68)

The accounting standard governing a state or local governmental employer’s accounting for pensions for fiscal years beginning after June 15, 2014.

Statement No. 75 of the Governmental Accounting Standards Board (GASB 75)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

The difference between the total UAL and the UAL attributable to the SLGRP for an individual employer that joined the SLGRP or the Local Government Rate Pool.

Unfunded Accrued Liability (UAL)

The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. The UAL is divided by combined valuation payroll and an amortization factor to determine an initial pre-collar UAL rate. The final UAL rate can be adjusted by the rate collar.



Milliman
111 SW Fifth Avenue, Suite 3700
Portland, OR 97204-3654
503 227 0634

This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

September 2016

City of Fossil/2248
Oregon Public Employees Retirement System

Dear Sir or Madam:

As part of our engagement with the Oregon Public Employees Retirement Board, we performed a system-wide actuarial valuation of the Oregon Public Employees Retirement System (“PERS” or “the System”) as of December 31, 2015. The attached report, which is an informational supplement to the system-wide report, provides you with employer-specific contribution rates that will become effective July 1, 2017. Information is also provided to assist you in preparing your required financial reporting disclosures under Statement 45 of the Governmental Accounting Standards Board. GASB 68 information will be provided separately by PERS and is not included in this report.

This report reflects the System's benefit provisions in effect as of December 31, 2015. The full development of the valuation results for the OPSRP and Retiree Health Insurance Account (RHIA) programs can be found in the separate system-wide actuarial valuation report. Costs of the IAP (Individual Account Program) are not included in this or the system-wide actuarial valuation report. Further, costs of pension obligation bond payments are not included in this or the system-wide actuarial valuation report.

If you have any questions about this report, please contact Debra Hembree, Actuarial Services Coordinator at Oregon PERS, at 503 603 7704 or Debra.Hembree@state.or.us.

Contents of Report

The executive summary provides the basic information you need including:

- Contribution rates for Tier 1/Tier 2, OPSRP general service, and OPSRP police and fire payroll,
- Information to assist you in completing GASB 45 financial reporting requirements, and
- A summary of principal valuation results.

The remainder of the report provides additional information including:

- Side account balances, transactions and rate relief,
- Detailed development of Tier 1/Tier 2 valuation results,
- A brief summary of methods and assumptions, and
- A brief summary of any changes in System benefit provisions.

Additional information is provided in the system-wide actuarial valuation report, which is available at www.oregon.gov/PERS/Pages/section/financial_reports/financials.aspx.



September 2016
City of Fossil/2248

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the System's staff. This information includes, but is not limited to, System benefit provisions as defined by statute, member census data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for the System have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer a reasonable estimate of anticipated experience affecting the System.

A valuation report is only an estimate of the System's financial condition as of a single date. It can neither predict the System's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of System benefits, only the timing of System contributions. While a valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: System experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the System's funded status); and changes in System benefit provisions or applicable law. Due to the limited scope of this assignment, we did not perform an analysis of the potential range of future measurements. The Board has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in September 2015.

Some of the actuarial computations presented in this report are for purposes of determining the contribution rates effective from July 2017 to June 2019 for System employers. Other actuarial computations presented in this report under GASB Statement No. 45 are for purposes of assisting System employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the System benefit provisions described in the appendixes of this report, and of GASB Statement No. 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.



September 2016
City of Fossil/2248

This report is prepared solely for the use and benefit of the Oregon Public Employees Retirement System, the employer named above, or its auditors solely for the purpose of completing an audit related to the matters herein. To the extent that this report is not subject to disclosure under applicable public records laws, it may not be provided to other third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of this report. Milliman's consent to release this report to any third party may be conditioned on the third party signing a release except for situations where such release is prohibited by law.

No third party recipient of this report should rely upon Milliman's work contained herein. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the System. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

Additional information is provided in the system-wide actuarial valuation report.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Larrabee".

Matt Larrabee, FSA, EA, MAAA
Principal and Consulting Actuary

A handwritten signature in black ink, appearing to read "Scott Preppernau".

Scott Preppernau, FSA, EA, MAAA
Principal and Consulting Actuary



ACTUARIAL VALUATION REPORT DECEMBER 31, 2015

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

INDEPENDENT EMPLOYERS

City of Fossil -- #2248

September 2016

CONTENTS

Executive Summary **1**

Employer Contribution Rates 1

Accounting Information 3

Principal Valuation Results 5

 ▪ Employer 5

 ▪ Tier 1/Tier 2 6

 ▪ OPSRP 7

 ▪ Retiree Healthcare 7

Side Account Information **8**

Tier 1/Tier 2 Valuation Results **10**

Assets 10

Liabilities 11

Unfunded Accrued Liability (UAL) 13

Contribution Rate Development 15

Data **20**

Brief Summary of Actuarial Methods and Assumptions **22**

Brief Summary of Changes in Plan Provisions **24**

Glossary **25**

Executive Summary

Milliman has prepared this report for City of Fossil to:

- Provide summary December 31, 2015 valuation results for the Oregon Public Service Retirement Plan (OPSRP) and the Retiree Health Insurance Account (RHIA),
- Provide employer-specific contribution rates effective July 1, 2017 through June 30, 2019,
- Provide employer-specific valuation results for side accounts and Tier 1/Tier 2 assets and liabilities as of December 31, 2015, and
- Provide reporting and disclosure information for financial statements for governmental agencies and pursuant to GASB Statement Number 45. GASB 68 information will be provided separately by PERS and is not included in this report.

This report summarizes the valuation results for the OPSRP and RHIA. The full development of these results can be found in the December 31, 2015 system-wide actuarial valuation report. This report develops employer-specific Tier 1/Tier 2 and side account rates and applies the results from the system-wide valuation to City of Fossil.

Employer Contribution Rates

The following table summarizes the employer contribution rates effective July 1, 2017 through June 30, 2019 for each type of payroll. There are separate normal cost rates for each of the payrolls based on the benefit structure supported by that payroll. The other rates apply to all payrolls regardless of the benefit structure to which they are attributed.

Employer Rates Effective July 1, 2017 for City of Fossil

	Payroll		
	Tier 1/Tier 2	OPSRP General Service	OPSRP Police & Fire
Pension			
Normal cost rate	13.84%	8.02%	12.79%
Tier 1/Tier 2 UAL rate ¹	(2.43%)	(2.43%)	(2.43%)
OPSRP UAL rate	1.27%	1.27%	1.27%
Side account rate relief	0.00%	0.00%	0.00%
Net pension contribution rate	12.68%	6.86%	11.63%
Retiree Healthcare			
Normal cost rate	0.07%	0.00%	0.00%
UAL rate	0.43%	0.43%	0.43%
Net retiree healthcare rate	0.50%	0.43%	0.43%
Total net employer contribution rate	13.18%	7.29%	12.06%

In this report, the payroll of Tier 1 and Tier 2 members is referred to as Tier 1/Tier 2 valuation payroll. Combined valuation payroll refers to the payroll for Tier 1/Tier 2 members, OPSRP general service members and OPSRP police and fire members.

¹ Includes Multnomah Fire District #10 rate.

Executive Summary

Employer Contribution Rates (continued)

Range of Potential Tier 1/Tier 2 Employer Pension Contribution Rates for the July 2019 to June 2021 Biennium

The rate collar limits changes in contribution rates, but does not limit changes in rates for individual employers related to side accounts. The table below shows the possible minimum and maximum rates first effective as of July 1, 2019, which will depend on the funded status as of December 31, 2017. If the employer's funded status excluding side accounts is less than 60 percent or greater than 140 percent, the rate collar doubles in size. If the employer's funded status excluding side accounts is between 60 and 70 percent or between 130 and 140 percent, the size of the rate collar is increased on a graded scale. Also, please note that by Board policy, independent employers with less than 2,500 employees cannot have a Tier 1/Tier 2 pension rate less than 6 percent of payroll (excludes side accounts and OPSRP UAL rates). The rates shown are before any adjustment for side account offsets or the 6 percent minimum independent employer contribution rate.

For comparison, the funded status as of December 31, 2015 is 76%.

Funded Status as of December 31, 2017	70% to 130%	Under 60% or Over 140%
2017-2019 Normal Cost + Tier 1/Tier 2 UAL Rate	11.41%	11.41%
Minimum 2019-2021 Rate	8.41%	5.41%
Maximum 2019-2021 Rate	14.41%	17.41%

Executive Summary

Accounting Information

Milliman is not an accounting or audit firm and cannot provide accounting advice. Milliman is not responsible for the interpretation of, or compliance with, accounting standards; citations to, and descriptions of accounting standards provided in this report are for reference purposes only. The information provided in this section is intended to assist the employer in completing its financial statements, but any accounting determination should be reviewed by your auditor.

Pension

In June 2012 the GASB issued Statement No. 68, which replaced GASB 27 and governs employer financial reporting for fiscal years beginning after June 15, 2014. The new standard replaced many of the key elements of the prior reporting requirements. Under the new rules, employers are required to record a balance sheet liability for their unfunded pension obligations. In addition, the timing and coordination of plan and employer reporting has changed under the new requirements. GASB 68 information for employers will be provided separately by PERS and is not included in this report.

Schedule of Funding Progress

Under GASB 27, the Schedule of Funding Progress for Tier 1/Tier 2 pension liabilities was reported in the Required Supplementary Information. This schedule is no longer required now that GASB 68 has replaced GASB 27. However, for additional information and the sake of historical comparison, the updated schedule is shown below for the last several valuations. For employers with side accounts, the actuarial value of assets in this Schedule includes the value of the employer's side accounts.

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (b - a)	Funded Ratio (a ÷ b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a) ÷ c)
12/31/2010	\$587,887	\$578,730	(\$9,157)	102%	\$80,610	(11%)
12/31/2011	579,010	654,449	75,439	88%	94,788	80%
12/31/2012	499,500	562,282	62,782	89%	69,765	90%
12/31/2013	544,706	567,476	22,770	96%	75,460	30%
12/31/2014	485,723	569,684	83,961	85%	77,810	108%
12/31/2015	443,152	582,368	139,216	76%	79,984	174%

Executive Summary

Accounting Information (continued)

Retiree Healthcare

The Retiree Health Insurance Account (RHIA) is a cost-sharing pool under Statement No. 45 of the Governmental Accounting Standards Board (GASB 45). Consequently, each employer reports the contractually required contribution. The contractually required contribution for retiree healthcare liabilities for the period July 1, 2017 through June 30, 2019 was calculated as a part of this valuation, and is expressed as contribution rates that are applied to the appropriate payroll. The rates and appropriate payroll are shown in the table below.

Contractually Required Contribution Rate

	Payroll		
	Tier 1 / Tier 2	OPSRP	
		General Service	Police & Fire
July 1, 2015 to June 30, 2017	0.53%	0.45%	0.45%
July 1, 2017 to June 30, 2019	0.50%	0.43%	0.43%

In June 2015, the GASB issued Statement 75, which will replace GASB 45 and govern employer financial reporting for retiree healthcare obligations for fiscal years beginning after June 15, 2017. In general, the changes required by GASB 75 parallel those that occurred for pension reporting when GASB 68 replaced GASB 27. Accounting information for reporting under GASB 75 will be provided separately and is not included in this report.

Executive Summary

Principal Valuation Results

A summary of principal valuation results from the current valuation and the prior valuation follows. Any changes in actuarial assumptions, methods or plan provisions between the two valuations are described later in this report. More detailed information can be found in the system-wide actuarial valuation report.

City of Fossil

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
T1/T2 UAL	\$139,216	\$83,961
Allocated pooled OPSRP UAL	11,371	8,895
Side account	0	0
Net unfunded pension actuarial accrued liability	150,587	92,856
Combined valuation payroll	79,984	77,810
Net pension UAL as a percentage of payroll	188%	119%
Calculated side account rate relief	0.00%	0.00%
Allocated pooled RHIA UAL	\$388	\$618

In the above exhibit, UAL amounts for the pools (OPSRP and RHIA) are allocated pro-rata based on the ratio of an employer's combined valuation payroll to that of the applicable pool. Pool total results are summarized on page 7 of this report. Allocated amounts shown above differ from the proportionate share of Net Pension Liability (NPL) that will be allocated to employers under GASB 68.

Executive Summary

Principal Valuation Results (continued)

Tier 1/Tier 2

	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
Normal cost	\$5,599	\$5,410
Tier 1/Tier 2 valuation payroll	40,451	39,313
Tier 1/Tier 2 pension normal cost rate	13.84%	13.76%
Tier 1/ Tier 2 Actuarial accrued liability	\$582,368	\$569,684
Actuarial asset value	443,152	485,723
Tier 1/Tier 2 Unfunded actuarial accrued liability	139,216	83,961
Tier 1/ Tier 2 Funded status	76%	85%
Combined valuation payroll	\$79,984	\$77,810
Tier 1/Tier 2 UAL as a percentage of payroll	174%	108%
Tier 1/Tier 2 UAL rate (includes Multnomah Fire District #10)	(2.43%)	(2.35%)
Tier 1/Tier 2 active members ¹	1	1
Tier 1/Tier 2 dormant members	0	1
Tier 1/Tier 2 retirees and beneficiaries	5	4

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Executive Summary

Principal Valuation Results (continued)

OPSRP

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
General service normal cost	\$342.2	\$301.3
OPSRP general service valuation payroll	4,266.9	3,720.4
General service normal cost rate	8.02%	8.10%
Police and fire normal cost	\$69.9	\$59.6
OPSRP police and fire valuation payroll	546.4	462.3
Police and fire normal cost rate	12.79%	12.90%
Actuarial accrued liability	\$3,742.5	\$3,064.1
Actuarial asset value	2,389.1	2,024.6
Unfunded actuarial accrued liability	1,353.5	1,039.5
Funded status	64%	66%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	14%	11%
UAL rate	1.27%	1.01%

Retiree Healthcare

(\$ in millions)	Actuarial Valuation as of	
	December 31, 2015	December 31, 2014
RHIA		
Normal cost	\$3.3	\$3.5
Tier 1 / Tier 2 valuation payroll	4,730.8	4,933.1
Normal cost rate	0.07%	0.07%
Actuarial accrued liability	\$465.6	\$468.4
Actuarial asset value	419.3	395.9
Unfunded actuarial accrued liability	46.3	72.5
Funded status	90%	85%
Combined valuation payroll	\$9,544.1	\$9,115.8
UAL as a percentage of payroll	0%	1%
UAL rate	0.43%	0.43%

Side Account Information

Reconciliation of Side Accounts

The following table reconciles the total side account from the beginning of the year to the end of the year. Side account transfers were calculated by PERS and made on a monthly basis. The amount of these transfers is shown in the table below.

All information in this table has been provided by PERS.

	New	Continuing	Total
1. Side account as of December 31, 2014	N/A		
2. Deposits made during 2015		N/A	
3. Administrative expenses			
4. Amount transferred to employer reserves during 2015			
5. Side account earnings during 2015			
6. Side account as of December 31, 2015 (1. + 2. + 3. + 4. + 5.)			

Side Account Information

Side Account Balances

	December 31, 2015	December 31, 2014
Side account 1	\$0	\$0
Side account 2	0	0
Side account 3	0	0
Total	\$0	\$0

Development of Side Account Rate

The rate relief attributable to an employer's side account is determined by amortizing the side account balance on the valuation date over a fixed period, and expressing the result as a percentage of combined valuation payroll. For side accounts established prior to December 31, 2009, the fixed period ends December 31, 2027. For side accounts established at a later date, the fixed period ends 18 years after the first rate-setting valuation following its creation.

	December 31, 2015	December 31, 2014
1. Total side account	\$0	\$0
2. Combined valuation payroll	79,984	77,810
3. Average Amortization factor	9.504	10.118
4. Total side account rate (-1. ÷ 2. ÷ 3.)¹	0.00%	0.00%

¹ For employers with more than one side account, the Total Side Account Rate is determined by calculating the rate on each side account separately and adding the rates together.

Tier 1/Tier 2 Valuation Results

Assets

A summary of the market value of pension assets, and reconciliation from the prior year are shown below.

Summary of Market Value of Tier 1/Tier 2 Pension Assets

	December 31, 2015	December 31, 2014
1. Member reserves	\$0	\$30,711
2. Employer reserves	214,749	239,062
3. Benefits in force reserve	228,404	215,950
4. Total market value of assets (1. + 2. + 3.)	\$443,152	\$485,723

The market value of member and employer reserves is provided by PERS. The benefits in force reserve provided by PERS is allocated each year among employers in proportion to their liabilities for retired members and beneficiaries.

Reconciliation of Tier 1/Tier 2 Pension Assets

	December 31, 2014 to December 31, 2015
1. Market value of assets at beginning of year	\$485,723
2. Regular employer contributions	1,707
3. Benefit payments and expense	(41,536)
4. Adjustments ¹	(11,011)
5. Interest credited	8,269
6. Total transferred from side accounts	0
7. Market value of assets at end of year (1. + 2. + 3. + 4. + 5. + 6.)	\$443,152

¹ Note the adjustment item above includes a reallocation of the benefits in force reserve, transfers to Multnomah Fire District #10, and other adjustments made by PERS.

Tier 1/Tier 2 Valuation Results

Liabilities

Normal Cost

The normal cost represents the value of benefits assigned to the next year of service by the actuarial cost method. If all actuarial assumptions are met, the normal cost represents the amount that would need to be contributed each year to fund plan benefits. Amounts shown below include assumed administrative expenses, which are allocated pro-rata based on normal cost.

Summary of Normal Cost by Tier/Member Classification

	December 31, 2015	December 31, 2014
Tier 1 Police & Fire	\$0	\$0
Tier 1 General Service	0	0
Tier 2 Police & Fire	0	0
Tier 2 General Service	5,599	5,410
Total	\$5,599	\$5,410

Change in Tier 1/Tier 2 Normal Cost

The following table shows the impact of the assumption, method, and plan changes on normal cost as of December 31, 2015.

	Before Changes	After Changes	Net Change
Normal Cost	\$5,599	\$5,599	\$0

Tier 1/Tier 2 Valuation Results

Liabilities

Actuarial Accrued Liability

The actuarial accrued liability represents the value of benefits allocated to service performed before the valuation date by the actuarial cost method. If all actuarial assumptions are met, the actuarial accrued liability represents the amount of assets that would need to be accumulated as of the valuation date to provide for the portion of benefits allocated to service already performed.

Summary of Actuarial Accrued Liability by Tier/Member Classification

	December 31, 2015	December 31, 2014
Active Members		
▪ Tier 1 Police & Fire	\$0	\$0
▪ Tier 1 General Service	0	0
▪ Tier 2 Police & Fire	0	0
▪ Tier 2 General Service	89,200	79,091
▪ Total Active Members	\$89,200	\$79,091
Dormant Members	0	71,655
Retired Members and Beneficiaries	493,168	418,938
Total Actuarial Accrued Liability	\$582,368	\$569,684

Change in Tier 1/Tier 2 Actuarial Accrued Liability

The following table shows the impact of the assumption, method, and plan changes on the actuarial accrued liability as of December 31, 2015.

	Before Changes	After Changes	Net Change
Actuarial Accrued Liability	\$582,368	\$582,368	\$0

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Summary of UAL

The UAL represents the difference between the assets accumulated and the liability attributed to prior years of service by the cost method.

	December 31, 2015	December 31, 2014
1. Actuarial accrued liability	\$582,368	\$569,684
2. Actuarial value of assets	443,152	485,723
3. Unfunded accrued liability (1. – 2.)	139,216	83,961
4. Funded percentage (2. ÷ 1.)	76%	85%
5. Combined valuation payroll	\$79,984	\$77,810
6. Unfunded accrued liability as % of combined valuation payroll (3. ÷ 5.)	174%	108%

Reconciliation of UAL Bases

Beginning with the December 31, 2013 actuarial valuation, each odd-year valuation establishes a 20-year closed-period amortization schedule for outstanding Tier 1/Tier 2 UAL amounts. Amortization schedules are calculated based on the total Tier 1/Tier 2 UAL as of that valuation date less the remaining unamortized balance of previously established Tier 1/Tier 2 UAL bases.

Amortization Base	UAL December 31, 2014	Payment	Interest	UAL December 31, 2015	Next Year's Payment
December 31, 2013	\$22,819	\$1,709	\$1,643	\$22,753	\$1,769
December 31, 2015	N/A	N/A	N/A	\$116,463	\$8,427
Total				\$139,216	\$10,196

Tier 1/Tier 2 Valuation Results

Unfunded Accrued Liability (UAL)

Actuarial Gain or Loss since Prior Valuation

The system-wide actuarial valuation report contains a detailed analysis of gains and losses since the last valuation. The table below shows the gain or loss for the individual employer.

1. Expected actuarial accrued liability	
a. Actuarial accrued liability at December 31, 2014	\$569,684
b. Normal cost at December 31, 2014 (excluding assumed expenses)	5,175
c. Benefit payments during 2015	(41,215)
d. Interest at 7.50% to December 31, 2015	41,375
e. Expected actuarial accrued liability before changes (a. + b. + c. + d.)	575,019
f. Change in actuarial accrued liability due to assumption, method, and plan changes	0
g. Expected actuarial accrued liability at December 31, 2015 (e. + f.)	575,019
2. Actuarial accrued liability at December 31, 2015	582,368
3. Gain/(loss) on actuarial accrued liability (1.g. - 2.)	(7,349)
4. Expected actuarial value of assets	
a. Actuarial value of assets at December 31, 2014	485,723
b. Contributions for 2015 ¹	1,707
c. Benefit payments and expenses during 2015	(41,536)
d. Interest at 7.50% to December 31, 2015	34,936
e. Expected actuarial value of assets at December 31, 2015 (a. + b. + c. + d.)	480,830
5. Actuarial value of assets at December 31, 2015	443,152
6. Gain/(loss) on actuarial value of assets (5. - 4.e.)	(37,678)
7. Total actuarial gain/(loss) (3. + 6.)	(\$45,027)

Unfunded Accrued Liability Reconciliation

A reconciliation of the Tier 1/Tier 2 UAL from December 31, 2014 is provided below.

1. UAL at December 31, 2014	\$83,961
2. Expected increase	10,228
3. Liability (gain)/loss	7,349
4. Asset (gain)/loss	37,678
5. Change due to changes in assumptions, methods, and plan provisions	0
6. UAL at December 31, 2015 (1. + 2. + 3. + 4. + 5.)	\$139,216

¹ Includes rate relief from side accounts.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Normal Cost Rate

For independent employers, the normal cost calculated previously is divided by projected payroll to determine a normal cost rate. The table below shows the development of the rate for each tier and member classification.

Development of Tier 1/Tier 2 Normal Cost Rate

	December 31, 2015			December 31, 2014		
	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate	Normal Cost	Employer Tier 1/Tier 2 Valuation Payroll	Normal Cost Rate
Tier 1 Police & Fire	\$0	\$0	0.00%	\$0	\$0	0.00%
Tier 1 General Service	0	0	0.00%	0	0	0.00%
Tier 2 Police & Fire	0	0	0.00%	0	0	0.00%
Tier 2 General Service	5,599	40,451	13.84%	5,410	39,313	13.76%
Total	\$5,599	\$40,451	13.84%	\$5,410	\$39,313	13.76%

An independent employer that has no Tier 1/Tier 2 active payroll will be assigned the weighted average normal cost of all independent employers as calculated in the system-wide actuarial valuation report.

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Development of Tier 1/Tier 2 UAL Rates

The UAL rate is determined by calculating the next year's scheduled payment to the UAL as a percentage of combined valuation payroll.

	December 31, 2015	December 31, 2014
1. Total Tier 1/Tier 2 UAL	\$139,216	\$83,961
2. Next year's Tier 1/Tier 2 UAL payment	10,196	6,133
3. Combined valuation payroll	79,984	77,810
4. Tier 1/Tier 2 UAL rate (2. ÷ 3.)	12.75%	7.88%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Pre-Rate Collar)

The following table summarizes the employer's pension contribution rate for Tier 1/Tier 2. The normal cost rates apply to Tier 1/Tier 2 payroll only, but all other rates apply to combined valuation payroll. These rates do not reflect adjustments due to the rate collar, the minimum 6 percent rate for independent employers with fewer than 2,500 members, or side accounts.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	13.84%	13.76%
b. Tier 1/Tier 2 UAL rate	12.75%	7.88%
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate (a. + b. + c.)	26.74%	21.79%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Adjustments Due to Rate Collar and Minimum Rate Requirements

Employer contribution rates are generally limited to change by no more than the greater of 3 percent of payroll or 20 percent from the current contribution rate. However, if the funded percentage excluding side accounts is below 60 percent or above 140 percent the rate collar doubles in size. If the funded percentage excluding side accounts is between 60 and 70 percent or 130 and 140 percent, the size of the collar is increased on a graded scale. In addition, for independent employers with less than 2,500 active members, the net employer Tier 1/Tier 2 contribution rate cannot be less than 6 percent of payroll. All collar and minimum rate calculations are performed prior to adjustments for side accounts and the OPSRP UAL rate.

The table below shows the current contribution rate for the period from July 1, 2015 through June 30, 2017, develops the maximum and minimum contribution rates effective July 1, 2017 based on the collar, and calculates the net adjustment due to the collar and minimum independent employer contribution rate. The net adjustment due to the rate collar is applied to the UAL rate. The net adjustment due to the 6 percent minimum independent employer contribution rate is applied to the pension normal cost rate.

1. Current net Tier 1/Tier 2 pension contribution rate		8.41%
2. Employer contribution rate attributable to side accounts		0.00%
3. Current employer Tier 1/Tier 2 pension contribution rate (1. – 2.)		8.41%
4. Size of rate collar		
a. 20% of current employer contribution rate (20% x 3.)		1.68%
b. Preliminary size of rate collar (maximum of 3% or a.)		3.00%
c. Funded percentage		76%
d. Size of rate collar (If c. < 60% or c. > 140%, 2 x b. If c. is 70%-130%, b. Otherwise, a graded rate between b. and 2 x b.)		3.00%
5. July 1, 2017 minimum employer contribution rate	(3. – 4.d. but not < 0%)	5.41%
6. July 1, 2017 maximum employer contribution rate	(3. + 4.d.)	11.41%
7. July 1, 2017 total pension rate, before adjustment		26.74%
8. Net adjustment due to rate collar (5. – 7., but not < 0, or 6. – 7., but not > 0)		(15.33%)
9. July 1, 2017 Tier 1/Tier 2 UAL rate, before collar		12.75%
10. July 1, 2017 Tier 1/Tier 2 UAL rate, after collar	(8. + 9.)	(2.58%)
11. July 1, 2017 Tier 1/Tier 2 pension rate, after collar		11.41%
12. Tier 1/Tier 2 retiree healthcare rate		0.50%
13. Net adjustment due to 6% minimum (6% - 11. - 12., minimum 0%)		0.00%
14. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, before minimum adjustment		13.84%
15. July 1, 2017 Tier 1/Tier 2 pension normal cost rate, after minimum adjustment (13. + 14.)		13.84%
16. July 1, 2017 Tier 1/Tier 2 pension rate, after minimum adjustment	(11. + 13.)	11.41%

Tier 1/Tier 2 Valuation Results

Contribution Rate Development

Tier 1/Tier 2 Employer Contribution Rate Summary (Post-Rate Collar)

The table below summarizes the employer's pension contribution rate for Tier 1 /Tier 2 after adjustments for the rate collar and the 6 percent of payroll minimum employer contribution rate.

	July 1, 2017 Rates calculated as of December 31, 2015	Advisory July 1, 2017 Rates calculated as of December 31, 2014
1. Tier 1/Tier 2 pension contribution rates		
a. Employer Tier 1/Tier 2 pension normal cost rate	13.84%	13.76%
b. Tier 1/Tier 2 UAL rate	(2.58%)	(2.50%)
c. Multnomah Fire District #10 rate	0.15%	0.15%
d. Total Tier 1/Tier 2 pension rate <i>(a. + b. + c., minimum of 5.50%)</i>	11.41%	11.41%

Data

Demographic Information

Employer Valuation Payroll

	General Service	Police & Fire	Total
Tier 1	\$0	\$0	\$0
Tier 2	40,451	0	40,451
Tier 1/Tier 2 valuation payroll	40,451	0	40,451
OPSRP valuation payroll	39,533	0	39,533
Combined valuation payroll	\$79,984	\$0	\$79,984

Employer Member Census

	December 31							
	2015				2014			
	Tier 1	Tier 2	OPSRP	Total	Tier 1	Tier 2	OPSRP	Total
Active Members ¹								
General Service	0	1	1	2	0	1	1	2
Police & Fire	0	0	0	0	0	0	0	0
Total	0	1	1	2	0	1	1	2
Active Members with previous service segments with the employer								
General Service	0	0	N/A	0	0	0	N/A	0
Police & Fire	0	0	N/A	0	0	0	N/A	0
Total	0	0	N/A	0	0	0	N/A	0
Dormant Members								
General Service	0	0	0	0	1	0	0	1
Police & Fire	0	0	0	0	0	0	0	0
Total	0	0	0	0	1	0	0	1
Retired Members and Beneficiaries								
General Service	5	0	0	5	4	0	0	4
Police & Fire	0	0	0	0	0	0	0	0
Total	5	0	0	5	4	0	0	4
Grand Total Number of Members	5	1	1	7	5	1	1	7

¹ Active counts do not include concurrent employees who have a separate dominant employer.

Data

Demographic Information (continued)

Employer Tier 1/Tier 2 Active Members as of December 31, 2015

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
<20										
20-24										
25-29										
30-34										
35-39										
40-44										
45-49										
50-54										
55-59			1							1
60-64										
65-69										
70-74										
75+										
Total	0	0	1	0	0	0	0	0	0	1

Distribution of Employer Tier 1/Tier 2 Members as of December 31, 2015

Dormant Members			Retired Members and Beneficiaries		
Age	Count	Average Deferred Monthly Benefit	Age	Count	Average Monthly Benefit
<20			<45		
20-24			45-49		
25-29			50-54		
30-34			55-59		
35-39			60-64	1	532
40-44			65-69	2	630
45-49			70-74		
50-54			75-79	1	1,189
55-59			80-84	1	478
60-64			85-89		
65-69			90-94		
70-74			95-99		
75+			100+		
Total			Total	5	692

Brief Summary of Actuarial Methods and Assumptions

A detailed summary of the actuarial methods and assumptions used to prepare the December 31, 2015 valuation can be found in the system-wide actuarial valuation report.

Actuarial Methods and Valuation Procedures

A brief summary of the methods used in this valuation is shown below:

<i>Actuarial cost method</i>	Entry Age Normal.
<i>Amortization Method</i>	<p>The UAL is amortized as a level percentage of combined payroll.</p> <p>The OPSRP UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 16 year period.</p> <p>The Retiree Healthcare UAL as of December 31, 2007 and experience in each subsequent biennium is amortized over a closed 10 year period.</p> <p>All existing Tier 1/Tier 2 UAL was re-amortized over a 20 year period as of the December 31, 2013 rate-setting valuation. Gains and losses between subsequent odd-year valuations will be amortized as a level percentage of projected combined valuation payroll over a closed 20 year period.</p>
<i>Asset valuation method</i>	Market value of assets, excluding reserves.
<i>Contribution rate stabilization method (rate collar)</i>	<p>Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) or independent employer are confined to a collar based on the rate pool's prior pension contribution rate (excluding side account rate offsets). The new contribution rate generally will not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the current rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funding percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.</p>

Economic Assumptions

A brief summary of the key economic assumptions used in this valuation is shown below:

<i>Net investment return</i>	7.50% compounded annually on system assets.
<i>Interest crediting</i>	<p>7.50% compounded annually on members' regular account balances.</p> <p>7.50% compounded annually on members' variable account balances.</p>
<i>Consumer price inflation</i>	2.50% per year.
<i>Future general wage inflation</i>	3.50% per year.
<i>Healthcare cost inflation</i>	Ranging from 6.3% in 2016 to 4.4% in 2094.
<i>Administrative Expenses</i>	<p>\$5.5 million added to OPSRP normal cost.</p> <p>\$33.0 million added to Tier 1/Tier 2 normal cost.</p>

Brief Summary of Actuarial Methods and Assumptions

Changes Since Last Valuation

The key changes since the December 31, 2014 actuarial valuation are described briefly below and are described in additional detail in the system-wide report.

Changes in Actuarial Methods and Allocation Procedures

There were no changes in actuarial methods and allocation procedures since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA actuarial methods and allocation procedures is provided as part of the system-wide valuation report.

Changes in Assumptions

There were no changes in assumptions since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA assumptions is provided as part of the system-wide valuation report.

Brief Summary of Changes in Plan Provisions

There were no changes in plan provisions occurred since the December 31, 2014 actuarial valuation. A complete summary of the Tier 1/Tier 2, OPSRP, RHIA, and RHIPA plan provisions valued is provided as part of the system-wide actuarial valuation report.

Glossary

Actuarial Accrued Liability

The portion of the present value of prospective benefits allocated to service and compensation before the valuation date in accordance with the actuarial cost method.

Actuarial Asset Value

The value of assets used in calculating the required contributions. The actuarial asset value may be equal to the fair market value of assets, or it may spread the recognition of certain investment gains or losses over a period of years in accordance with an asset valuation method.

Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disablement and retirement; rates of investment earnings and other relevant items.

Actuarial Cost Method

Sometimes called “funding method,” a particular technique used by actuaries to establish the amount and incidence of the annual actuarial cost of pension plan benefits, or normal cost, and the related unfunded actuarial accrued liability. Ordinarily, the annual contribution to the plan comprises the normal cost and an amount for amortization of the unfunded actuarial accrued liability.

Actuarial Gain or (Loss)

A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions, during the period between two actuarial valuation dates, as determined in accordance with a particular actuarial cost method.

Combined Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for both Tier 1/Tier 2 and OPSRP active members. This payroll is used to calculate UAL rates.

Cost Sharing Multiple-Employer Plan

A single plan used to provide pensions to the employees of more than one employer wherein pension obligations are pooled and plan assets can be used to pay the benefits of the employees of any employer that provides pension through the plan.

Employer Contribution Rate

Consists of the normal cost rate and the UAL rates, plus adjustments for other items such as side account rate offsets.

Funded Status

The actuarial value of assets expressed as a percentage of the actuarial accrued liability.

Normal Cost

The annual cost allocated to the current year, under the actuarial cost method in use. The normal cost divided by the applicable payroll is the normal cost rate.

OPSRP Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for OPSRP active members. This payroll is used to calculate OPSRP normal cost rates.

Glossary

Pre-SLGRP Liability

The sum of Pre-SLGRP Pooled Liabilities and Transition Liabilities.

Pre-SLGRP Pooled Liability

The difference between the total UAL and the UAL attributable to the SLGRP for a pool of employers that joined the SLGRP. There are currently two pre-SLGRP pools. One was created for State Agencies and Community Colleges when the SLGRP was formed. The other one was created when the Local Government Rate Pool joined the SLGRP.

Present Value

Sometimes called “actuarial present value,” the estimated cost (as of the valuation date) of a series of future payments. The present value is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Rate Collar

A methodology that defines the maximum permissible period-to-period change in the base employer contribution rate. The width of the rate collar is determined by the current contribution rate and funded status.

Required Supplementary Information (RSI)

Schedules, statistical data, and other information that are an essential part of financial reporting and should be presented with, but are not part of, the basic financial statements of a governmental entity.

Statement No. 27 of the Governmental Accounting Standards Board (GASB 27)

The accounting standard governing a state or local governmental employer’s accounting for pensions prior to GASB 68.

Statement No. 45 of the Governmental Accounting Standards Board (GASB 45)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions.

Statement No. 68 of the Governmental Accounting Standards Board (GASB 68)

The accounting standard governing a state or local governmental employer’s accounting for pensions for fiscal years beginning after June 15, 2014.

Statement No. 75 of the Governmental Accounting Standards Board (GASB 75)

The accounting standard governing a state or local governmental employer’s accounting for post-employment benefits other than pensions for fiscal years beginning after June 15, 2017.

Tier 1/Tier 2 Valuation Payroll

Projected payroll subject to PERS employer contribution rates for the calendar year following the valuation date for Tier 1 and Tier 2 active members. This payroll is used to calculate the Tier 1/Tier 2 normal cost rate.

Transition Liability

The difference between the total UAL and the UAL attributable to the SLGRP for an individual employer that joined the SLGRP or the Local Government Rate Pool.

Unfunded Accrued Liability (UAL)

The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. The UAL is divided by combined valuation payroll and an amortization factor to determine an initial pre-collar UAL rate. The final UAL rate can be adjusted by the rate collar.



Milliman
111 SW Fifth Avenue, Suite 3700
Portland, OR 97204-3654
503 227 0634

In compliance with the Americans with Disabilities Act, PERS will provide this document in an alternate format upon request. To request this, contact PERS at 888-320-7377 or TTY 503-603-7766.

This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.